

NOTE TO READERS:

The Administrator signed the following Notice of Proposed Rulemaking on January 4, 2001, and EPA has submitted it for publication in the *Federal Register*. While the Agency has taken steps to ensure the accuracy of this Internet version of the rule, it is not the official version of the rule for purposes of public comment. Please refer to the official version in a forthcoming *Federal Register* publication or on the Government Printing Office's Web Site. You can access the *Federal Register* at: http://www.access.gpo.gov/su_docs/aces/aces140.html. Once GPO publishes the official *Federal Register* version of the rule, EPA will provide a link to that version at its web site.

**III. PROPOSED CAPACITY, MANAGEMENT, OPERATION AND MAINTENANCE (CMOM)
STANDARD CONDITION FOR MUNICIPAL SANITARY SEWER COLLECTION SYSTEMS**

**A. What Existing Standard Conditions Address Operation and Maintenance
of Sanitary Sewer Collection Systems?**

Under existing regulations at 40 CFR 122.41, all NPDES permits must contain two standard conditions addressing operation and maintenance:

- Proper operation and maintenance requirements at 40 CFR 122.41(e). This standard permit condition requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions; and
- Duty to mitigate at 40 CFR 122.41(d). This standard condition requires the permittee to take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment.

When these two standard conditions are in a permit for a POTW or a collection system, they require the permittee to properly operate and maintain its collection system as well as take all reasonable steps to minimize or prevent SSO discharges to waters of the United States that have a reasonable likelihood of adversely affecting human health or the environment. In addition, these provisions, along with a prohibition on SSOs to waters of the U.S., are the basis for requiring permittees to provide adequate sanitary sewer collection system capacity. Today's proposed CMOM standard condition would clarify EPA's expectations for case-by-case interpretations of how these existing conditions apply to municipal sanitary sewer collection systems. It would also build upon these provisions.

In addition, the CWA construction grants program established provisions requiring grantees under the program to assure proper and efficient operation and maintenance of treatment works and their associated collection systems. These provisions required the development of operation and maintenance manuals; emergency operating programs; personnel training; adequate budget; and operational reports. (See 40 CFR 35.925-10, 35.935-12, 35.2106, and 35.2206).²²

B. Why is Proper Management, Operation and Maintenance Important?

The purpose of a sanitary sewer collection system is to transport wastewater uninterrupted from its source to a treatment facility.

²² In accordance with Section 602(b)(6) of the CWA, the Clean Water State Revolving Fund Program no longer contains Title II Construction Grant requirements.

Failure to do so can result in significant health and/or environmental risks associated with releases of raw sewage. Sanitary sewer collection systems are complex and must be properly managed, operated, and maintained for a number of reasons, including:

- \$ The timing and location of most SSO events, such as those caused by blockages or component failures, is unpredictable.
- \$ Sewer systems are continually degrading. This degradation can lead to structural failure, failure of pumps and other equipment, loss of capacity, increases in inflow and infiltration (I/I), and street subsidence.
- \$ Sewer systems must be cleaned periodically to maintain their capacity and decrease corrosion.
- \$ Collection systems can be overloaded if they are designed improperly, the service population is increased to levels that exceed design, or I/I rates become too high; and
- \$ SSOs that do occur must be responded to immediately to minimize health or environmental risks.

Proper management, operation and maintenance (which includes ensuring the system provides adequate capacity) can reduce the occurrence of collection system failures. Effective management, operation and maintenance is necessary to maintain the capacity of the collection system, to reduce the occurrence of temporary problem situations such as blockages, to protect the structural integrity and capacity of the system, and to anticipate potential problems and take preventive measures.

Sanitary sewer collection systems represent a major national infrastructure investment and are typically one of the largest infrastructure assets of a community. Proper management, operation and maintenance of the collection system protects the investment in the collection system and treatment facilities; it also provides for more efficient operation, extends the life of system components, and can reduce the need to provide additional peak flow capacity. A report from the American Society of Civil Engineers (ASCE) and the Water Environment Federation notes that sanitary sewer collection systems are probably the most abused of all public utilities due to misuse and neglect.²³ Awareness is growing, however, of the need for operation and maintenance activities as investments in the sanitary sewer system. For example, a 1999 survey of 42 municipalities by ASCE showed that some municipalities have significantly increased their investment in maintenance of their sanitary sewer collection systems. Survey participants increased

²³See Gravity Sanitary Sewer Design and Construction, WPCF Manual of Practice No. FD-5, ASCE Manual and Report on Engineering Practice No. 60, 1982.

maintenance investments by an average of 14 percent per year from 1989 to 1996 (see Table 11).

Table 11. Change in Maintenance Activities Over 20 Years (Percent of Collection System per Year)

Maintenance Activity	Annual percent of collection systems addressed in 1976	Average annual percent of collection systems addressed 1990-1996
Flow Monitoring	9%	31%
Manhole Inspection	12%	27%
Smoke/Dye testing	2%	8%
Closed circuit TV	2%	7%

Source: Optimization of Collection System Maintenance Frequencies and System Performance, ASCE, 1999.

C. What is the proposed CMOM Program Approach?

The proposed CMOM program approach described in today's proposed rule would:

- \$ Clarify general performance standards;
- \$ Provide a flexible framework for municipalities to identify and incorporate widely-accepted wastewater industry practices to: (a) manage, operate and maintain their collection systems; (b) investigate the capacity of their collection systems; and, (c) respond to SSO events that do occur;
- \$ Include self-assessments and information management for improvement and adjustment of system-specific programs; and
- \$ Establish minimum documentation requirements which are intended to improve program efficiency, improve oversight by the NPDES authority, and give the public information about specific events and performance trends.

The proposed CMOM approach outlines a dynamic system management framework that encourages evaluating and prioritizing efforts to identify and correct performance-limiting situations in the collection system. The approach is intended to:

- (1) Assist municipal operators by establishing flexible procedures for efficient sewer management programs that result in a high level of service to customers and achieve regulatory compliance; and
- (2) Provide NPDES authorities and other reviewers with clear documentation of the permittees' efforts.

1. What Would the CMOM Permit Provision Attempt to Accomplish?

The proposed CMOM permit conditions would establish a process and framework for improvement by the permittee to:

- (1) Understand how the collection system works and performs;
- (2) Identify goals and objectives for managing a specific collection system;
- (3) Provide the necessary program structure to allow goals to be met. This would include ensuring appropriate program components are in place, including organization of administrative and maintenance functions; legal authorities; measures and activities; and design and performance provisions;
- (4) Strive for adjustment of implementation activities to reflect changing conditions. This would include monitoring and measuring program implementation and making appropriate modifications, conducting necessary system evaluations, implementing a capacity assurance program, and conducting periodic program audits to

evaluate CMOM program implementation and to identify deficiencies and steps to respond to them.

- (5) Prepare for and respond to emergency events; and
- (6) Communicate with interested parties on the implementation and performance of the CMOM program.

2. What are the Major Components of the Proposed CMOM Standard Permit Condition?

The permittee's permit would require development of a CMOM program with the following components:

- \$ General standards - Comply with five general performance standards, as described below;
- \$ CMOM program - Develop and implement a CMOM program, and develop a written summary of the program, that provides the necessary program structure to comply with the general performance standards. The program must:
 - (1) Identify goals;
 - (2) Identify the organizational structure that will implement program measures;
 - (3) Provide adequate legal authority needed for program implementation;
 - (4) Ensure appropriate programs, measures and activities are implemented;
 - (5) Provide necessary design and performance provisions; and
 - (6) Ensure that implementation is monitored and program elements are updated as appropriate.
- \$ Overflow emergency response plan - Develop and implement an overflow emergency response plan that provides procedures for responding to SSO events.
- \$ System evaluation and capacity assurance plan - Develop a plan for system evaluation and capacity assurance, if peak flow conditions contribute to an SSO discharge.
- \$ Program audits - Conduct periodic program audits and report results.
- \$ Communication - Communicate with interested parties.

When the proposed CMOM standard permit condition is incorporated into a permit, the provision will require the permittee to: (1) comply with general standards; (2) develop and implement a CMOM program that will result in compliance with the general standards and that must include elements listed in the CMOM permit provision; and (3) develop a written summary of its CMOM program. Some examples of potential violations associated with the CMOM permit provision are:

\$ Failure to comply with the documentation requirements of the CMOM program permit condition. Documentation requirements would include development of: a written summary of the permittee's CMOM program, an overflow response plan, a system evaluation and capacity assurance plan (if required), and a CMOM program audit; and

\$ Failure to comply with the general standards established in the permit for a CMOM program, or any element of the CMOM program specifically required by the permit. Such a failure may be evidenced by an SSO occurrence, by inadequate CMOM program implementation, or by the permittee's failure to implement the measures and activities described in its CMOM program summary or other required document.

As discussed in section III.P of the preamble, EPA does not intend for the NPDES authority to approve permittees' CMOM programs. As a result, permittees could modify their CMOM programs at their discretion (and without notice to the permitting authority) provided that the CMOM program, as modified, continued to address each element required by the permit. The provisions in a permittee's CMOM program summary would not be independently enforceable if not approved by the NPDES authority, but could be evidence of failure to comply with the general standards established in the permit.

D. Why is EPA Proposing a CMOM Approach?

Today's proposal would clarify EPA expectations regarding proper management, operation and maintenance of municipal sanitary sewer collection systems and how permittees should comply with the five general standards in the proposed CMOM provision. EPA's major objective in proposing these clarifications is to reduce health and environmental risks by improving:

\$ The performance of the nation's municipal sanitary sewer collection system infrastructure through improved CMOM program implementation and system design; and

\$ The response to SSOs that do occur, including appropriate public notification.

EPA believes that the CMOM permit provision would improve the performance of municipal sanitary sewers because it would:

- (1) Provide a framework with clear expectations for municipalities to evaluate, and where necessary modify, the manner in which they manage, operate and maintain their systems and ensure that their systems have adequate capacity; and
- (2) Improve NPDES authorities' ability to provide regulatory oversight over the management, operation, maintenance and design of

collection systems in a technically sound manner that fosters cooperative approaches between NPDES authorities and municipalities to identify and resolve deficiencies.

An improvement in sanitary sewer collection system performance should reduce the occurrence of noncompliance events (e.g., overflows and releases). As up-front (preventive and predictive) maintenance of collection systems increases, long-term rehabilitation costs are expected to fall. Flows to treatment plants would be reduced in some cases. Reductions in flows can lower collection system and treatment facility operating costs and capacity needs.

1. Efficient Management System Approach

Industry technical guidance supports the need for dynamic management, operation and maintenance approaches for sanitary sewer collection systems that use information about system performance, changing conditions, and operation and maintenance practices to guide and modify responses, routine activities, procedures, and capital investments. Today's proposed CMOM permit conditions are intended to encourage the efficient management system approaches and information handling supported by the wastewater industry. It brings together and coordinates the features of individual measures and initiatives.

An effective CMOM program would enable the permittee to:

- \$ Develop and update routine preventive maintenance activities designed to prevent service interruption and protect capital investments;
- \$ Develop an inspection schedule and respond to the results of the inspection;
- \$ Investigate problems that cause SSOs and take appropriate corrective measures;
- \$ Respond to SSOs in a timely manner that minimizes impacts to human health and the environment;
- \$ Identify and evaluate trends in SSOs;
- \$ Develop appropriate budgets and identify staffing needs;
- \$ Plan for future growth and ensure adequate capacity is available, or would be provided;
- \$ Identify hydraulic (capacity) and physical deficiencies and prioritize responses, including capital investments;
- \$ Identify programmatic deficiencies (e.g., inadequate funding, lack of legal authority, inadequate preventive maintenance) and develop appropriate responses;
- \$ Keep parts and tools inventories current and equipment in working order; and
- \$ Report and investigate safety incidents and take steps

\$ to prevent their recurrence.

2. Clarified Expectations

Some representatives of stakeholder groups and other sources have postulated that clarifying expectations for the existing "duty to mitigate" and "proper operation and maintenance" standard conditions (40 CFR 122.41(d) and (e) respectively) is appropriate because operators currently do not understand what is expected and how their programs will be evaluated. While today's proposed requirements generally do not identify specific details of activities that would need to be taken, they do provide documentation requirements and a framework for evaluating the comprehensiveness of programs. One of the major purposes of these proposed requirements is to clarify the process for evaluating CMOM programs and activities and promote additional dialogue with the NPDES authority that would ultimately provide clearer expectations.

The proposed CMOM permit condition would clarify that the permittee must develop and implement a CMOM program. The CMOM program should be consistent with industry and State practices and guidelines and implement a process for appropriate improvement and proper management that uses self-assessments and information management techniques. In addition, permittees would have to satisfy the proposed documentation requirements of the provision. EPA will be encouraging NPDES permitting and enforcement authorities to use CMOM documentation requirements to increase communication between the NPDES authority and permittees on the specific scope, nature, and requirements of these programs.

3. Oversight by NPDES Authority

Today's proposed CMOM approach would complement traditional performance characterizations (e.g., counting SSO events) and enforcement approaches with a technically sound approach that encourages municipalities to effectively operate their systems, respond to noncompliance events, and provide the public with information. Evaluating the performance of sanitary sewer collection systems is a complex task and depends on system-specific facts. Given the unplanned nature of SSO events, accurate data relating to the cause of the event is limited. There is no simple method for determining when the sewer utility has made enough effort to prevent SSO events. Evaluating the management, operation and maintenance program can complement performance information and allows for a consideration of effort as well as a comparison with industry best practices.

A major goal of today's proposal is to improve the ability of NPDES authorities to comprehensively and proactively evaluate the

management programs and performance of municipal sanitary sewer collection systems. The proposed CMOM permit provision, coupled with today's proposed requirements for reporting and recordkeeping, would give NPDES authorities better information for identifying permitting, enforcement, and compliance assistance responses. The proposed CMOM permit provision is expected to provide both the permittee and the NPDES authority with a technically sound understanding of how the collection system is operated, performance trends, and the factual circumstances associated with specific events. This understanding should promote informed enforcement responses. NPDES authorities would consider the quality of CMOM program implementation when exercising prosecutorial discretion and developing enforcement priorities.

Where enforcement is appropriate, the proposed provision would ensure better documentation of SSO events. The proposed CMOM provision also provides additional detail which can be used to identify specific areas where permittee's programs are in noncompliance with its permit (e.g., specific legal authorities lacking, inadequate maintenance, inadequate training). In addition, the permittee's identification of steps to respond to deficiencies identified in the audit and elsewhere in the CMOM program can be a starting point for determining remedies.

E. What is EPA's Authority for Proposing the CMOM Standard Permit Condition?

Section 402(a) of the CWA authorizes EPA to prescribe permit conditions as necessary to carry out the provisions of the CWA, including permit conditions on data and information collection and reporting. In addition, section 308 of the CWA authorizes EPA to require NPDES permittees to establish, maintain, and report records for determining whether there has been a violation of the Act. The provisions in the proposal are modeled after existing standard permit conditions to the extent that such conditions assure that any resulting discharges comply with the CWA.

F. What Performance Standards Would Be Required Under the Proposed CMOM Standard Permit Condition?

Today's proposed CMOM standard permit condition for municipal sanitary sewer collection systems contains five general performance standards shown in Table 12.

Table 12. General Performance Standards in Proposed CMOM Standard Permit Condition

The Permittee would need to:

- (1) properly manage, operate and maintain, at all times, the parts of collection system that the permittee owns or over which it has operational control;
 - (2) provide adequate capacity to convey base flows and peak flows;
 - (3) take all feasible steps to stop, and mitigate the impact of, sanitary sewer overflows;
 - (4) provide notification to parties with a reasonable potential for exposure to pollutants associated with the overflow event; and
 - (5) develop a written summary of their CMOM program and make it, and required program audits, available to the public upon request.
-

The first proposed performance standard would require proper management, operation and maintenance of the collection system and would clarify how the standard in the existing standard permit condition at 40 CFR 122.41(e) applies to sanitary sewer collection systems.

The second proposed performance standard would require that the municipal sanitary sewer collection system provide adequate capacity to convey base flows and peak flows. These concepts are discussed in section III.I of today's preamble.

The third proposed performance standard would require that the permittee take all feasible steps to stop and mitigate the impacts of SSOs. This is similar to the existing "duty to mitigate" standard permit condition at 40 CFR 122.41(d), but would expand the duty to mitigate to address SSOs that did not result in a discharge to waters of the United States. EPA believes that this expansion is appropriate because of the health risks associated with SSOs that do not go to waters of the U.S., as well as the difficulty at the start of a specific SSO event in determining whether the SSO would ultimately result in a discharge of pollutants to waters of the U.S. EPA is proposing use of the word "feasible" in describing the types of steps that must be taken as a way of limiting the response to a reasonable range of measures, within the practical capability of the permittee, resulting from the exercise of reasonable judgment in application of the overflow emergency response plan. EPA seeks comment on whether other adjectives, such as

"practicable," or "reasonable," might better describe the type of response necessary.

The fourth proposed performance standard would require the permittee to provide notification to parties with a reasonable potential for exposure to pollutants associated with specific SSO events. This provision is intended to work together with the public notification requirements proposed in today's proposed rule. Public notification is discussed in more detail in section VI.B of today's proposed rule.

The fifth proposed performance standard would require that a written summary of the CMOM program be developed and that it, along with required program audits, be made available to the public.

EPA requests comments on these performance standards, including whether they are worded clearly, whether they are appropriate to assure compliance with the CWA, and whether additional performance standards would be appropriate.

G. What Are the Proposed Components of CMOM Programs?

Today's proposal identifies six components of CMOM programs that EPA believes are generally necessary to meet the five performance standards in the proposed standard condition. The CMOM program would need to:

- (1) Identify program goals consistent with the general standards;
- (2) Identify administrative and maintenance functions responsible for implementing the CMOM program and chain of communication for complying with reporting requirements for SSOs;
- (3) Include legal authorities necessary for implementing the CMOM program;
- (4) Address appropriate measures and activities necessary to meet the performance standards;
- (5) Provide design and performance provisions; and
- (6) Monitor program implementation and measure its effectiveness.

EPA requests comments on these components of a CMOM program and whether additional components should be specified. In particular, the Agency requests comment on whether to require information about the permittee's capability and resources to implement the CMOM program as a separate component of the CMOM documentation requirements.

EPA also requests comments on whether each of the proposed program components is necessary to the goals of eliminating all avoidable SSOs and minimizing the health and environmental risks of those SSOs that do occur.

1. Program Goals

Program goals help determine the course of action needed to set a CMOM program in motion. Goals define the purpose and sought-for results of the CMOM program. Goals may reflect performance, safety, customer service, resource use, compliance, and other considerations. Wastewater Collection Systems Management, 5th edition, Manual of Practice #7, Water Environment Federation provides additional discussion of goals for sanitary sewer collection system programs.

2. Administrative and Maintenance Functions

There are different models for structuring an effective organization. Responsibilities for managing and implementing CMOM program activities need to be clearly defined, documented, and communicated, however. Job descriptions help ensure that all employees know specific responsibilities and individuals have proper credentials.

An organization's size depends on the size, complexity, and specific features of the collection system. Determination of staff requirements for a collection system requires a working knowledge of the system and consideration of key variables. For all but very small systems, there should be at least one on-site management representative who has responsibility and authority for ensuring the program is being implemented and properly updated and who regularly reports back to top management officials on the performance of the program. Personnel should have the required training for each CMOM program activity.

3. Legal Authorities

In order to implement an effective CMOM program, the permittee would need to have sufficient legal authority to authorize implementation activities. Today's proposed CMOM provision would require the operator to exercise the legal authority necessary to implement the CMOM program. The proposed CMOM provision identifies five classes of activities that EPA generally believes are necessary for implementing a CMOM program:

- (A) Controlling infiltration and connections from inflow sources;
- (B) Requiring that sewers and connections be properly designed and constructed;
- (C) Ensuring proper installation, testing, and inspection of new and rehabilitated sewers;
- (D) Addressing flows from municipal satellite collection systems (to the extent the permittee services such systems); and
- (E) Implementing the general and specific prohibitions of the national pretreatment program (see 40 CFR 403.5).

The Agency recognizes that the scope and nature of legal authority necessary to implement a CMOM program varies from system to system. For example, the legal authority needed to address flows from municipal satellite collection systems will vary from system to system. For some systems, the operator of a collection system receiving flows from a municipal satellite collection system will only need legal authority to control the volume of the peak flow. For other systems more comprehensive authority to implement CMOM measures may be appropriate (see discussion of permitting options for municipal satellite collection systems).

A collection system without municipal satellite collection systems would not be required to have legal authority to address this situation. The proposed CMOM provision provides that if an element listed in the provision is not appropriate or applicable for a specific collection system, the permittee would need to explain in its CMOM program summary why the element is not appropriate.

The Agency requests comment on whether the legal authority for controlling I/I should specify controlling I/I from private sources, such as the privately owned portions of building laterals. Private building sewer connections represent a large portion of the collection system (e.g., typically about 50 percent of the total sewer length). Many inflow connections are associated with these connections (e.g., foundation drains, area drains, downspouts), including connections that are intentionally made to provide site drainage. Such connections are typically considered illegal by local government agencies, although many older connections were authorized at the time they were installed. A recent WEF survey indicated that about 80 to 85 percent of municipal sanitary sewer operators have enforceable regulations prohibiting downspout, roof drain and area drain connections to their sanitary sewer systems. A number of studies have shown that the overall effectiveness of I/I removal efforts will be limited in many municipal collection systems if private sources of I/I are not addressed.

The proposed CMOM provision would not specify the form of legal authority because adequate authority can generally be established through identification of sewer use ordinances, service agreements or other legally binding documents. EPA requests comments on the legal authority necessary to implement a CMOM program, and whether additional elements should be specified in the standard permit condition. In particular, EPA requests comments on whether controlling the introduction of grease from commercial establishments and institutions into a collection system should be specifically listed under the legal authorities section. Grease can be a significant source of blockages. Many systems have incorporated grease trap requirements for commercial

food establishments or processors that discharge a large volume of waste oils or tallow. Although many existing municipal codes and ordinances require the installation of these traps, routine maintenance and inspection can sometimes be lacking. Lack of maintenance on traps can lead to failure. Local health departments sometimes have a role in assuring that grease trap owners routinely maintain their traps and reduce the amount of waste oils discharged to the system.

4. Measures and Activities

Municipalities would need to implement a variety of measures, activities and programs to meet the five performance standards in the proposed CMOM requirement. Measures, activities and program requirements would need to be tailored to the size, complexity and specific features of the collection system. The proposed CMOM provision specifically identifies eight general classes of measures and activities that EPA believes are generally appropriate and applicable for most municipal sanitary sewer collection system programs. The Agency recognizes that not all classes of measures or activities may be appropriate for all collection systems. For example, a very small system with a service population of several thousand may not require regular cleaning if the system has not experienced overflows. Where a permittee believes that a particular set of measures or activities that are listed in the CMOM provision is not appropriate or applicable for its collection system, the written summary of the program would document the reasoning for that belief.

a. Maintenance Facilities and Equipment

Permittees would need to provide adequate maintenance facilities and equipment. Maintenance facilities are locations where equipment, materials and personnel are dispatched and where operations records are kept. Increasingly, computer systems are used to manage maintenance records. Industry guidance recognizes that a properly planned and supported equipment yard is essential to collection system operation. In smaller municipalities, collection system maintenance equipment and personnel typically share one yard with other municipal operations, such as water and street departments. Larger municipalities typically have independent and self-sufficient facilities, except where a central repair yard or heavy-duty repair shop is available. Detailed industry recommendations for maintenance facilities are provided in WEF, 1999.²⁴

²⁴Water Environment Federation, 1999. Wastewater Collection Systems Management, 5th edition, Manual of Practice

b. Maintenance of a Collection System Map

One of the most typical problems in collection system management and maintenance is determining the locations of sewer lines and manholes. Determining such locations is best done by keeping appropriate collection system maps. Many agencies keep large paper maps divided into overlapping, large-scale sections that can be bound into books that can be stored easily and taken into the field as needed. WEF, 1999 provides detailed industry recommendations for maps.

c. Use of Timely, Relevant Information

Timely, relevant information plays a critical role in an effective CMOM program, as highlighted by industry guidance. (See WEF, 1999, and Prevention and Control of Sewer System Overflows, Second Edition, Manual of Practice FD-17, Water Environment Federation, 1999.) A dynamic CMOM program focuses on planning, implementing, reviewing, evaluating and taking appropriate actions in response to available information. The key to these approaches is the ability to get information from staff in the field to managers.

Timely information is necessary for:

- \$ Providing emergency responses;
- \$ Investigating problems and complaints that cause or may lead to overflows and determining an appropriate response;
- \$ Scheduling and tracking inspections;
- \$ Planning maintenance activities, schedules, and work orders;
- \$ Managing parts, equipment, and tool inventories;
- \$ Developing training plans and schedules;
- \$ Tracking and preventing safety incidents;
- \$ Planning staffing and budgeting;
- \$ Identifying hydraulic and physical deficiencies and prioritizing responses; and
- \$ Identifying programmatic deficiencies and developing appropriate responses.

The proposed CMOM provision would not require that a computer or electronic database be used. Permittees could use paper copy systems to track information and data. EPA believes that regardless of the method for managing information, operators should have a written description of the procedures used, including procedures for operating and updating the system. If the system is computer-based, procedures should present any unique hardware and software requirements. EPA requests comments on the use of timely information in a CMOM program and the best way to reflect priorities in the proposed CMOM provision.

d. Routine Preventive Operation and Maintenance Activities

A good preventive maintenance program is one of the best ways to keep a system in good repair and to prevent service interruptions and system failures which can result in overflows and/or backups. In addition to preventing service interruptions and system failures, a preventive maintenance program can protect the capital investment in the collection system. Preventive maintenance activities should ensure that the permittee:

- \$ Routinely inspects the collection system, including pump stations, and addresses damage or other problems;
 - \$ Investigates complaints and promptly corrects faulty conditions;
 - \$ Provides maintenance records, an adequate workforce and appropriate equipment in working order; and
 - \$ Maintains and updates a schedule of planned activities.
- Preventive maintenance activities typically address:
- \$ Planned, systematic, and scheduled inspections to determine current conditions and plan for maintenance and repairs;
 - \$ Planned, systematic, and scheduled cleaning and repairs of the system based on past history;
 - \$ Proper sealing and/or maintenance of manholes;
 - \$ Regular repair of deteriorating sewer lines;
 - \$ Remediation of poor construction;
 - \$ Inspection and maintenance of pump stations and other appurtenances; and
 - \$ A program to ensure that new sewers and connections are properly designed and constructed and new connections of inflow sources are prohibited.

Preventive maintenance, particularly in medium- or large-sized systems, typically includes predictive management and bases system management on historical information and how the system ages. Predictive management is an important feature of preventive maintenance and can be used for both long-range replacement or repairs and for establishing routine maintenance work orders for areas with known histories. Recordkeeping is the basis for an effective predictive management program, without which even the best guesswork will not produce the desired results. For agencies with limited personnel, equipment, or financial resources, predictive management can be an effective means for keeping ahead of problems that can cause major repairs or flow interruptions, and spreads the costs of remedial work over time.

EPA requests comments on the degree of specificity that is appropriate in this provision for requiring preventive maintenance programs. In particular, the Agency requests comments on whether specific aspects of a preventive maintenance program should be

identified in the standard permit condition as a measure or activity of a CMOM program.

e. Program to Assess the Capacity of the Collection System and Treatment Facilities

A critical function of a collection system is to provide adequate capacity for wastewater flows. The capacity needs of a collection system change as the system ages, new connections are made, and existing connections change their water usage. Capacity problems can arise under a number of circumstances, including when:

- \$ Service demands in part of the system are too great. Excessive service demands occur when new connections exceed the system's reserve capacity;
- \$ I/I increases as the system ages;
- \$ The capacity of the system decreases due to factors such as the formation of solids deposits and other partial blockages, increases in the roughness of pipes, or loss of pump capacity.

Today's proposed CMOM provision would require the permittee to develop and implement a program to assess the current capacity of the collection system and treatment facilities for which it has operational control. Identifying reserve capacity, hydraulic deficiencies, and capacity needs is critical for effective asset management. The capacity assessment program should ensure procedures exist and are implemented for:

- \$ Determining whether adequate capacity exists in downstream portions of the collection system and treatment facilities that will receive wastewater from the new connections; and
- \$ Identifying existing capacity deficiencies in the collection system and at treatment facilities.

(1) New Connections

Many States currently have requirements and/or guidelines for capacity certifications for new connections to sanitary sewer collection systems. In an initial review of several State requirements, EPA found that the States reviewed did not provide specific procedures and protocols for conducting capacity analysis as part of certification. Operators appear to base certification on available design data along with any information that may indicate previous overflow conditions. More detailed evaluations may be conducted where design information indicates that a sewer is nearing capacity or if overflow conditions had been previously noted in the applicable sewer segments. EPA requests comment on the specific procedures and protocols that municipalities use to support capacity certifications and on whether any State requirements specify particular protocols and procedures for evaluating capacity.

EPA expects that procedures and protocols used to comply with State certification requirements would typically satisfy the CMOM capacity assessment program requirements for new connections. EPA requests comment on whether existing State requirements provide adequate safeguards for ensuring that capacity limitations associated with new development are identified and reported to the appropriate State officials, or whether additional reporting requirements should be incorporated in the CMOM standard permit condition.

(2) Capacity Deficiencies

In addition to determining if adequate capacity exists for new connections, EPA is proposing that the permittee be required to conduct an ongoing program to identify existing capacity deficiencies in the collection system and at treatment facilities. This proposed provision would not be intended to require system-wide comprehensive evaluations, flow monitoring, and/or diagnostic work. As a general rule, detailed system-wide evaluations are inappropriate due to the nature of sanitary sewer problems, where typically only a portion of the sewer system experiences complex problems that call for complex evaluations. The technical literature generally suggests that typically about 20 percent of a sanitary sewer system with significant wet weather problems requires detailed investigation. For many systems, detailed investigation of whole networks is usually not justified, either structurally, environmentally or hydraulically. (See Sewerage Rehabilitation Manual, Third Edition, 1994, Water Research Centre.) Rather, ongoing programs to assess system capacity can be based on information from a variety of sources, including targeted inspections, available flow monitoring information, and/or information on reserve capacity. Of course, the NPDES authority may require, in an enforcement action or permit, that a permittee conduct a detailed evaluation of more than 20 percent of its system if the NPDES authority believes it is warranted.

Under today's proposal, EPA would require more intensive evaluations and studies in areas of the collection system where peak flow conditions have contributed to an SSO event or to noncompliance at a treatment plant (see requirements for system evaluation and capacity assurance plans). This approach seems consistent with industry practice, where portions of the collection system that experience wet weather SSOs are typically given a high priority in rehabilitation efforts. Further, the identification of likely SSO locations and evaluation of the causes of SSOs are recommended as part of a comprehensive preventive maintenance program and capital expenditure plan (see draft Protocols for Identifying Sanitary Sewer Overflows, ASCE, April, 2000). EPA requests comments on this targeting approach.

Structural and hydraulic problems can be closely related. Minor defects can lead to structural problems in specific soil conditions when a sewer is subjected to surcharge because of insufficient hydraulic capacity. A cycle of exfiltration and infiltration can occur that causes fine soil particles to migrate into the sewer, reducing lateral support from the soil. This can lead to the collapse of the sewer. Many of the techniques used to identify structural defects also provide information on hydraulic performance, such as excess sediment, debris, roots, open joints and misaligned joints. EPA requests comments on the relationship between proposed requirements for programs to identify structural deficiencies, programs to identify hydraulic deficiencies and system evaluation and capacity assurance plans, and how the CMOM provisions for these measures should be coordinated.

f. Identification and Prioritization of Structural Deficiencies and Responding Rehabilitation Actions

Sanitary sewers are exposed to harsh internal and external environments. System components continuously deteriorate due to factors such as natural aging, soil settlement, excessive overburden, corrosion from sulfide and other causes, and electrochemical corrosion. Many systems are composed of components with a wide variety of ages. Structural condition assessment is a principle objective of any pipeline system inspection program and is important to cost-effective management of the collection system.

EPA is proposing that, where appropriate, CMOM programs would need to include ongoing programs for identifying structural deficiencies and prioritizing corrective actions. Where deficiencies are identified, the CMOM program must also identify implementing short-term and long-term rehabilitation actions to address each deficiency. The CMOM program summary should clearly identify the techniques used in the program, such as field inspections or closed-circuit television, identify areas of the collection system where various measures are employed, and describe criteria for identifying priorities for inspection and for correction. Efforts to rate the condition of system components can be used to help prioritize actions. Where rating systems are used for identifying the condition of individual components of the collection system, the rating system should be explained.

Detailed recommendations for identifying, prioritizing and correcting structural and hydraulic deficiencies are provided in:

- \$ Existing Sewer Evaluation & Rehabilitation, WEF Manual of Practice FD-6, ASCE Manual and Report on Engineering Practice No. 62
- \$ Sewer System Infrastructure Analysis and Rehabilitation Handbook, EPA, 1991

\$ Manual of Sewer Condition Classification, Water Research Centre, 1993

The Water Research Centre in the United Kingdom has agreed to allow the North American Association of Pipeline Inspectors to use its sewer classification program in North America and for the North America Sewer Services Companies (NASSCO) to have rights to their program in the United States. NASSCO intends to use this program in conjunction with others to develop a standard classification of sewer conditions in the United States. The NASSCO process will include: conversion to U.S. standards; certification of television operators; development of multiple teaching facilities; and assistance to software manufacturers to convert to the new standard.

g. Training

Collection system employees are exposed to numerous challenging conditions, and adequate training, including safety training, is necessary for employees to meet these challenges. Wastewater Collection System Management, Manual of Practice No. 7, Fifth edition, WEF, 1999, recommends that an organized training program is a necessity, regardless of agency size. The WEF guidance also provides that typically, 3 to 5 percent of the gross budget be set aside for training expenditures. Under today's proposal, training programs would address safety procedures and training to ensure employees are adequately prepared to implement appropriate provisions of the CMOM program.

h. Equipment and Replacement Parts Inventories

Providing adequate maintenance facilities and equipment typically includes a process for identifying critical parts needed for system operation, and maintenance of an adequate inventory of replacement parts. Without an adequate inventory of replacement parts, the collection system may experience extended overflow events in the event of a breakdown or malfunction. The process for identifying critical parts can be based on a review of equipment and manufacturer's recommendations, supplemented by the experience of the maintenance staff. The amount and types of equipment and tools held by a utility depend on the size, age and condition of the system.

5. Design and Performance Provisions

Many defects in sewers that contribute I/I are attributable to poor design and improper construction in both newly constructed and rehabilitated sewers.²⁵ An effective program that ensures that new

²⁵ Control of Infiltration and Inflow in Private Building Sewer Connections, Water Environment Federation, 1999.

sewers are properly designed and installed can help avoid permanent system deficiencies that could create or contribute to future overflow events and/or operation and maintenance problems. (Wastewater Collection System Management: Manual of Practice, 5th edition, Water Environment Federation, 1999.) Similarly, major rehabilitation and repair projects are opportunities to ensure that work is done correctly in a way that will minimize future problems. The proposed CMOM provision would require permittees to develop and implement programs to ensure:

- \$ Requirements and standards are in place for the installation of new collection system components and for major rehabilitation projects; and
- \$ Procedures and specifications for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects are implemented.

Under this proposed provision, the permittee typically would provide oversight, including inspection, of new sewers and major rehabilitation/repair projects associated with service connections and laterals and private satellite collection systems. The Agency requests comments on ownership issues associated with programs to oversee new sewers and major rehabilitation/repair efforts.

Many collection systems that have sized sewer components according to current protocols have experienced overflows because the levels of I/I were greater than originally expected and removal of I/I has generally proven more difficult and costly than was anticipated. The Agency requests comment on the continued use of existing I/I allowance criteria in light of improved materials of construction, and whether the Agency should investigate the need for modifying these requirements to further prevent SSOs in the future.

6. Monitoring, Measurement, and Program Modifications

Accurate sewer performance information is an important part of the proposed CMOM process for improving collection system performance and is a core task of any asset management program. Today's proposed CMOM provision would require permittees to monitor the implementation and, where appropriate, measure the effectiveness of elements of their CMOM programs. Satisfaction of this requirement typically would include identifying performance indicators to describe and track the implementation of various aspects of their CMOM programs. Performance indicators are ways to quantify and document the results and effectiveness of control efforts. Performance indicators also can be used to measure and report progress towards achieving goals and objectives and to guide management activities. EPA believes that

information from these efforts is critical to ensuring that a CMOM program is updated as appropriate to reflect changing conditions, maintenance strategies that prove effective, and new information.

The Agency is in the process of identifying performance indicators for collection system CMOM programs. Recent discussions on performance indicators for collection systems are provided in:

- \$ Collection Systems: Methods for Evaluating and Improving Performance, California State University, Sacramento, 1998.
- \$ Optimization of Collection System Maintenance Frequencies and System Performance, American Society of Civil Engineers, 1999.
- \$ Benchmarking Wastewater Operations-Collection, Treatment, and Biosolids Management, Water Environment Research Foundation, Project 96-CTS-5, 1997.
- \$ MOP #7, Water Environment Federation, 1999.
- \$ Stamaker, R. and Riggsy, M. "Evaluating the Effectiveness of Wastewater Collection System Maintenance." Water/Engineering Management, January, 1997.

Performance indicators for sanitary sewer collection systems are discussed in detail in section III.N of today's preamble. EPA requests comments on which performance indicators would be the most useful for characterizing collection system performance. In addition, the Agency requests comments on whether it should establish or recommend a minimum standard set of performance indicators to be tracked as part of the CMOM program. A standard set of performance indicators may allow for comparison of different collection systems and in the long run may lead to a better understanding of expectations for sanitary sewer performance.

In particular, the Agency requests comments on the use of the procedure for rating sanitary sewer collection system performance developed by the American Society of Civil Engineers (ASCE). (See Optimization of Collection System Maintenance Frequencies and System Performance, ASCE, 1999.) As discussed in section I.J of today's preamble, ASCE has developed a statistical method for comparing six performance measures associated with sanitary sewer collection systems: pipe failures, SSO events, complaints, pump station failures, the ratio of peak hourly flow to average daily flow, and the ratio of peak monthly flow to average daily flow.

7. Communications

Today's proposed standard permit condition encourages the permittee to communicate on a regular basis with interested parties on the implementation and performance of its CMOM program. The communication system should allow interested parties to provide input to the permittee as the CMOM program is developed and implemented.

Communications can include public education as well as public notification and public involvement that seeks broad public input before major proposals are developed and at key points during proposal development and implementation. This approach would require the permittee to identify and invite interested parties to the table, to present the scope of the project or program in a way that citizens and other pertinent government agencies can comprehend, and to work to identify and address concerns. This up-front process is longer and more complex, but should help identify problems or conflicts before resources are spent. Such a process also can increase public support of public works projects from start to finish, including more support of the funding necessary to pay for the program or project.²⁶

EPA seeks comment on whether communication with interested parties should be a mandatory element of the CMOM program (i.e., whether it should be included in the list of mandatory program elements in proposed 122.42(e)(2)), and, if so, which aspects should be mandatory requirements (e.g., development of a communication plan).

H. Should EPA Set Minimum Levels for CMOM Program Activities such as Preventive Maintenance?

Today's proposal does not include minimum levels for CMOM program activities such as preventive maintenance. EPA does not believe that national minimum levels are appropriate at this time for the following reasons:

- (1) CMOM programs need to be tailored to the specific operational characteristics of a given collection system. Specific activities should be continually evaluated and modified as appropriate to address new conditions or new information. Defining national minimum requirements may work against this by driving programs toward the minimum rather than providing flexibility to focus on priority and critical sewers;
- (2) Several studies have recommended that national numeric preventive maintenance standards for municipal sanitary sewer collection systems are not practical at this time because there is very

²⁶Layton, S, "Public Participation in Process is Strategic tool for Public Works," APWA Reporter, March 1997.

little correlation of existing preventive maintenance data to system performance²⁷;

- (3) National minimum standards may not reflect unique system characteristics. For example, cleaning crew production rates may be relatively high for an agency in which most of the gravity system is located in easily accessible, little traveled streets because the crews are able to quickly set up and clean the sewer segments with minimal traffic control activity. Variation in other system-specific factors, such as the travel time, and amount of debris in the pipe, debris removal and disposal procedures, can affect production rates and make comparisons difficult. Site-specific considerations, such as flat slopes or poor soils, may require some communities to clean and/or inspect the sanitary sewer system more regularly.

The Agency invites comments and specific suggestions on the use of national minimum standards in the proposed CMOM provision.

I. What are the Major Documentation Requirements in the Proposed CMOM Standard Permit Condition?

All permittees would be subject to three major documentation requirements in today's proposed CMOM standard permit condition:

- (1) Written summary of the CMOM program;
- (2) Overflow emergency response plan; and
- (3) Program audit report.

In addition, permittees that have had peak flow conditions that contribute to an SSO discharge would need to prepare a system evaluation and capacity assurance plan, unless the hydraulic deficiency causing the SSO was corrected or the SSO discharge met the criteria provided in section 122.42(f)(2) of the proposed standard permit condition clarifying the prohibition on SSO discharges caused by severe natural conditions and for which there was no feasible alternative.

1. CMOM Program Summary

In today's proposed rule, EPA is proposing that permittees be required to develop a written summary of their CMOM programs. The permittee would be required to make the CMOM program summary available to the NPDES authority and public upon request. The primary purposes of the CMOM program summary are to:

²⁷See "Collection Systems: Methods for Evaluating and Improving Performance," California State University, 1998, "Stopping SSOs: Beneficial Maintenance Practices," Charlotte-Mecklenburg, SSO National Conference, EPA, 1995, and "Sanitary Sewer Overflows and Sewer System Maintenance," University of North Carolina at Charlotte, 1998.

- \$ Ensure NPDES authorities have adequate information to begin an evaluation of the permittee's CMOM program; and
- \$ Provide the public with information on the permittee's CMOM program.

The program summary should give an overview of the management program and summarize major implementation activities. The summary may incorporate other documents by reference. At a minimum, the summary would have to describe:

- (1) Goals of the CMOM program;
- (2) The organization responsible for implementing the CMOM program, and the chain of communication for reporting SSOs to the NPDES authority;
- (3) Legal authorities for implementing the CMOM program;
- (4) Measures and activities the permittee intends to implement as part of its CMOM program;
- (5) Design and performance requirements and/or standards for the following activities:
 - (a) installation of new collection system components;
 - (b) rehabilitation and repair projects;
 - (c) procedures for inspecting and/or testing the installation of new sewers, pumps, and other appurtenances; and
 - (d) rehabilitation and repair projects;
- (6) How the permittee would monitor implementation of the CMOM program and, where appropriate, measure the performance or effectiveness of specific program elements; and
- (7) How the permittee would communicate with interested stakeholders about the implementation and performance of the CMOM program.

If the permittee believes any of the listed CMOM provisions are not appropriate for its CMOM program, the summary would have to explain why. The permittee would be required to modify the summary of the CMOM programs as appropriate to keep it updated and accurate. In general, CMOM program summaries should be as brief as possible. EPA expects that the length of the summary would vary depending on the size and complexity of the system and other factors. The CMOM program summary for some very small municipalities may only be several pages long. EPA requests comments on the appropriate scope and content of the CMOM program summary.

2. Overflow Emergency Response Plans

An overflow emergency response plan provides a standardized course of action for wastewater collection system personnel to follow in the event of an SSO. An overflow emergency response plan should describe the permittee's planned options for response, remediation and

notification measures under different SSO scenarios. EPA believes that an up-to-date overflow emergency response plan is necessary to ensure that a municipality is adequately prepared to respond to SSO events. EPA believes that given the public's potential direct interest in a municipality's response to SSO events, the public should be given access to overflow emergency response plans and, in certain cases, to inform their development.

EPA anticipates that under the proposal, overflow emergency response plans would identify procedures for a wide range of potential system failures. At a minimum, overflow emergency response plans would be expected to address mechanisms to:

- (1) Identify SSOs;
- (2) Provide immediate response and emergency operations;
- (3) Provide appropriate immediate notification to the public, health officials, other affected entities and the NPDES authority (as required in today's proposed reporting, public notification and recordkeeping standard permit condition); and
- (4) Ensure that appropriate personnel are adequately trained to implement the plan.

The plan should also provide a process for periodically reviewing and updating the plan. Detailed industry recommendations for overflow emergency response plans is provided in Preparing Sewer Overflow Response Plans: A Guidebook for Local Governments, American Public Works Association, 1999. The APWA guidebook also provides a model overflow emergency response plan.

a. Identification of SSOs

The overflow emergency response plan should describe strategies for a wide range of potential system failures for receiving and dispatching information. This would include a description of the role of each participant in the response, beginning at the time a complaint or report is received and continuing through the satisfactory response to the incident.

b. Provide Immediate Response and Emergency Operations

The overflow emergency response plan should describe strategies for a wide range of potential system failures to:

- \$ Mitigate the impact of SSOs as soon as possible by mobilizing labor, materials, tools, and equipment to investigate reported incidents; and
- \$ Document the findings and response.

The National Weather Service recommends that a National Oceanic and Atmospheric Administration (NOAA) weather radio, that includes a battery backup and a tone-alert feature that automatically broadcasts an alert when a watch or warning is issued, can be the best source of current flood warnings. A NOAA weather radio can provide warning messages on flash floods, flood watches, flood warnings, urban and small stream advisories, and flash flood or flood statements.

c. Immediate Notification to the Public, Health Agencies, Other Affected Entities, and the NPDES Authority

Today's proposed requirements for an overflow emergency response plan would require the permittee to provide a framework describing how it would notify the public, as well as other entities, of overflows that may imminently and substantially endanger human health. The proposed overflow emergency response plan provision would not dictate the specific procedures or the specific information that would be provided through immediate notification. Rather, the provision would require the permittee to develop a plan, in consultation with potentially affected entities, that establishes a framework for case-by-case notification which depends on the nature of the overflow event and the responsibilities of different local entities. Given the complexities of immediate notification, the Agency believes it is critical to use the flexibility of a system-specific overflow emergency response plan to identify and clarify specific notification responsibilities and notification protocols.

EPA expects that the plan would identify appropriate authorities at the local, county, and/or State level to receive notification and identify the roles and relationships of the permittee, public health authorities, and other authorities, including lines of communication and the identities of responsible officials. EPA requests comments on this approach.

i. Criteria for Identifying Overflows that Trigger Notification Requirements

Under the proposal, the overflow emergency response plan would describe the criteria to be used to evaluate if a given overflow event may imminently and substantially endanger human health and if immediate notification of the public, a public health agency, or other impacted entity (e.g., water supplier) is required. The criteria would reflect the uses of potentially impacted waters as well as other relevant factors. The development of these criteria should be coordinated with the NPDES authority, local health officials, drinking water suppliers, and other key potentially impacted entities.

In general, SSOs that are expected to meet the "may imminently and substantially endanger human health" criterion for immediate notification include major line breaks, overflow events that result in fish kills or other significant harm, and overflow events that occur in sensitive waters and high exposure areas such as protection areas for public drinking water intakes and swimming beaches and waters where primary contact recreation occurs (see Chapter X of the Enforcement Management System Guide, EPA, March 7, 1996). NPDES authorities may identify other areas or overflows of specific concern in guidance.

ii. Immediate Notification of the Public

Under today's proposal, the permittee would be required to coordinate with State and/or local health agencies to identify public notification procedures for inclusion in the permittee's overflow emergency response plan. The overflow emergency response plan would describe actions that would be taken, in cooperation with State and/or local health agencies, and the entity responsible for each action, to:

- \$ Limit public access to areas impacted by municipal sanitary sewer overflows. Actions should include temporary signage to provide notification for impacted surface water bodies, ground surfaces or other areas;
- \$ Post emergency overflow outfall locations where affected water bodies are accessible to the public; and
- \$ Provide other appropriate media and public notification.

EPA expects that, at a minimum, notification would include the following information:

- \$ The location of the overflow and/or affected receiving water;
- \$ A clear statement identifying the potential health problem (e.g., raw sewage has been released, water is contaminated);
- \$ Measures to avoid exposure (e.g., avoiding contact with ponded water or soil); and
- \$ Name and phone number to contact for further information.

The Agency anticipates that an overflow emergency response plan would likely provide for a range of potential options with selection of a specific option or options depending on the immediate circumstances of the overflow. The notification methods selected for different types of SSOs should provide the necessary information to the appropriate audience based on exposure and public health considerations. Not all of these notifications would be appropriate for all situations. Options for consideration include:

- \$ Hand delivery of information bulletins or door hangers to populations exposed to an imminent and substantial human health

- risk in cases where the population is limited and easily defined and accessible;
- \$ Temporary (e.g., less than one week) posting at affected use areas (e.g., along a beach front) in cases where recreational uses are affected on a short-term basis;
 - \$ Temporary posting at selected public places with affected use areas such as a bulletin board or public information center at a park or beach, in cases where the public has access to the area selected for display; and
 - \$ Notices in newspapers or in radio/television public announcements, in cases where public exposure is likely to be widespread or health impacts severe.

Under the proposed provision, the permittee would be responsible for notifying the public in accordance with the permittee's overflow emergency response plan. Depending on local circumstances, this may involve the permittee directly notifying the public or it may involve the permittee notifying a different entity, such as the local health authority, who would in turn notify the public. The advantages to letting another authority provide this information include the existence of other notification mechanisms for public health and safety, the training and background of the employees applying the notification criteria, and the need for consistency of message. EPA is particularly interested in examples illustrating the appropriateness of an entity other than the permittee providing immediate public notification due to institutional arrangements with other entities that provide notification of public health risks and can provide the necessary information on overflows with the necessary promptness. If, for example, the permittee's overflow emergency response plan documents an arrangement under which public health authorities receive the notification and transmit it directly to the affected public, should this relieve the permittee of responsibility for providing direct notification? EPA seeks comment on whether more flexible wording would provide greater flexibility while ensuring the same level of public health protection (for example, replacing "You must notify" with "You must ensure that the public is notified . . ."). EPA also seeks comment on how to clarify when the public health risk warrants different forms of public notification.

iii. Immediate Notification of Health Officials

Public health authorities can play an important role in assessing the health risks of SSOs and notifying the public of potential health threats. In many cases public health authorities may have mechanisms in place, or may be able to develop mechanisms, to coordinate assessment

and public notification activities for SSOs with those activities for other similar potential public health risks, such as CSOs, or can integrate SSO notification into notification on beach closings, shellfishing restrictions, and other use impairments.

Public health authorities also can play an important local role, in coordination with the permittee, in tracking SSO occurrences and patterns and establishing long-term notification and posting procedures in cases where recurring SSOs pose a chronic health or environmental threat. In this role public health authorities can form an important bridge between citizens, the permittee, and Federal and State authorities.

Under today's proposal, the overflow emergency response plan would identify specific reporting protocols between the permittee and the appropriate public health authorities, tailored to the needs of the public health authorities and other local circumstances. EPA expects that, at the very least, the notification would enable public health authorities to assess any immediate health threat, participate in monitoring and public notification activities, and facilitate longer-term public awareness activities and tracking of long-term overflow trends and potential health threats.

EPA does not expect that immediate notification to public health authorities would entail significantly more information collection or reporting responsibilities than those already proposed for immediate noncompliance reporting to NPDES authorities or immediate notification to the public. EPA seeks comment on whether the regulation should specify certain minimum elements of this notification, such as a characterization of the size of the overflow and when the overflow began and ended, if known.

In establishing the institutional arrangements for permittees and public health authorities it may also be beneficial to agree on certain "boilerplate" public notification information that either the permittee or public health authority could provide, and which would be applicable in a range of SSO events. Information would include:

- \$ Possible health risks of exposure;
- \$ Measures to avoid exposure B e.g., avoiding contact with ponded water or contaminated soil; and
- \$ Name and phone number to contact for further information.

iv. Immediate Notification of Other Impacted Entities

Under today's proposal, the permittee's overflow emergency response plan would have to identify other potentially impacted entities that would also receive immediate notification. These entities would be identified based on system-specific considerations and could include

drinking water providers, beach monitoring authorities, local police or fire departments, downstream municipalities and downstream facilities with water intakes that use waters for purposes that could result in health risks (e.g., processing food). EPA seeks comment on whether the rule should provide guidance on how the overflow emergency response plan should identify which additional entities to notify, and under which circumstances.

v. Additional Public Notification

In addition to the immediate notification provisions described above, EPA is proposing to require permittees to provide more permanent notification at specific locations with recurring overflows that continue to have a potential to affect human health. For example, where the system has designed or "built in" overflow structures that may overflow in a manner that could have the potential to affect human health. The additional public notification requirement for recurring overflows that continue to have a potential to affect human health and designed overflow structures is intended to address more routine activities associated with responding to an overflow as well as long-term activities such as permanent posting of overflow structures at pump stations and other locations. As discussed in Section VI.B.4., the Agency is also requesting comment on whether "potential to affect human health" is the appropriate criterion to trigger additional public notification requirements.

The permittee's overflow emergency response plan should specify procedures and protocols for this additional public notification, including how other affected entities, such as local, State, or tribal public health officials, parks and recreation officials, and members of the public, would be consulted.

d. Training and Distribution and Maintenance of the Plan

EPA is proposing that the overflow emergency response plans ensure adequate training for appropriate personnel. The overflow emergency response plan would describe:

- \$ How the plan would be distributed and otherwise made available to personnel responsible for implementing the plan;
- \$ Training procedures for appropriate personnel, including the frequency of the training activities; and
- \$ The process for reviewing and updating the plan.

3. Program Audit Report

At the heart of the CMOM process is the concept of ongoing assessment of the CMOM program and the performance of the collection

system. EPA believes that one important part of the assessment is periodic comprehensive audits of the program. EPA is proposing that permittees conduct comprehensive audits of their programs at least once every five years.

Under the proposal, permittees would be required to conduct an audit that included:

- \$ Interviews with facility managers;
- \$ Field inspection of equipment and other resources;
- \$ Interviews with field personnel and first level supervisors, observation of field crews; and
- \$ Review of pertinent records and information management systems.

Based on an evaluation of information from these sources, the permittee would be required to develop an audit report. At a minimum the audit report would have to address:

- (A) The findings of the audit, including deficiencies;
- (B) Documentation of steps taken to respond to each finding in the report, including steps taken to correct each deficiency; and
- (C) A schedule for additional steps to respond to findings of the report.

The proposed comprehensive audit requirement is not intended to necessarily require system-wide flow monitoring, SSEs or physical inspections. These types of activities may be part of a CMOM program to one degree or other, and are discussed in the context of system evaluation and capacity assurance plans (see section III.I.4), and CMOM measures and activities (see section III.G).

The Agency notes that its Audit Policy, Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations (65 FR 19618; April 11, 2000), would not apply to the proposed audit requirement in today's proposed rule. The Agency's Audit Policy, which provides incentives, including eliminating or substantially reducing the gravity component of civil penalties, applies to facilities who voluntarily self-disclose and promptly correct violations, and does not apply to compulsory disclosure requirements such as those proposed today.

4. System Evaluation and Capacity Assurance Plan

Capacity assurance is a process to identify, characterize and address hydraulic deficiencies in a sanitary sewer collection system. Under today's proposal, permittees would need to implement a program to assess the current capacity of the collection system and treatment facilities that they own or over which they have operational control. EPA is proposing that where peak flow conditions contribute to an SSO discharge or to noncompliance at a treatment plant, permittees would be

required to prepare and implement a system evaluation and capacity assurance plan unless the permittee has either:

- \$ Taken steps to correct the hydraulic deficiency; or
- \$ The permittee demonstrates that the discharge was caused by severe natural conditions and that there were no feasible alternatives to the discharge (see the proposed prohibition provision at 122.42(f)(2)).

There are several evaluating and planning approaches for identifying, characterizing and addressing hydraulic deficiencies in sanitary sewer collection systems. A comprehensive set of long-term actions may be needed for collection systems with complex wet weather capacity problems. Industry guidance suggests different variations to the multiple phase approach for complex situations²⁸. While there is some variation in the multi-phase approach recommended in the literature, they generally address the following activities:

- Initial evaluation of the management and performance of the collection system based on available information;
- Planning for and collecting additional information/data on the management and performance of the collection system;
- Clarification of management and performance objectives, developing and evaluating alternatives and selecting measures;
- Implementation of measures; and
- Continued monitoring and assessment to determine the effectiveness of implemented measures and adjustment of measures as necessary.

Today's proposal would not require a specific approach be followed, and is intended to provide flexibility in conducting evaluations and identifying appropriate responses.

a. Evaluations

Under today's proposal, the evaluation portion of the plan would have to include a summary of steps that were planned or that have been taken to evaluate the cause of the hydraulic deficiency and provide suitable information to support selection of actions to address the deficiencies. The scope of an evaluation for a specific deficiency is expected to vary depending on the cause, nature and complexity of the deficiency. Some deficiencies, such as lift stations or pumps that are not coordinated, treatment plants that are not adjusted according to

²⁸ For example, Existing Sewer Evaluation & Rehabilitation, WEF MOP FD-6, ASCE Report No. 62, 1994, recommends a four phased integrated approach to rehabilitation of sewer systems (Phase 1 - Planning Investigation; Phase 2 - Assessing the System I/I Conditions, Structural Conditions, and Hydraulics; Phase 3 - Developing the System Usage Plan; and Phase 4 - Implementing the System Usage Plan). Handbook-Sewer System Infrastructure Analysis and Rehabilitation, EPA 1991, describes a four phase approach that includes a preliminary sewer system analysis, an I/I analysis, a sewer system evaluation survey and sewer system rehabilitation.

influent flow, or major structural problems at manholes or with pipes, should be addressed by short-term measures without the need for or the delay associated with extensive analysis of the system.

Where a collection system experiences complex wet weather capacity problems that result in wet weather overflows or plant noncompliance problems, accurate characterization of the sewer system should precede portions of the comprehensive response. In these situations, a thorough understanding of the characteristics and performance of the collection system is essential for developing cost-effective solutions. Trying to fix complex, wet weather collection system problems without adequately evaluating the collection system can result in pursuing inappropriate solutions that are not the most cost-effective and that may even lead to overflow problems in other parts of the collection system. In addition, a detailed evaluation of the collection system can dramatically reduce remediation costs by providing information on the causes of the SSO problem that allows selection of the most cost-effective solutions.

Collection system evaluations undertaken to address wet weather SSO problems should focus primarily on identifying the major sources that contribute to the peak flows associated with overflow events (e.g., sources of inflow and rainfall-induced infiltration) and hydraulic problems (e.g., bottlenecks, insufficient slopes, inadequate pumps). Evaluations that focus primarily on SSO problems may differ from many traditional sanitary sewer evaluation surveys that often focus primarily on infiltration affecting base flows.²⁹ To quantify peak flows entering a collection system accurately, total flows need to be measured or accounted for and estimated, including contained flows remaining in the system and escaping flows such as overflowing manholes or other SSOs. Complete and accurate flow monitoring is extremely important to estimate peak flows.³⁰ Measured flows need to be correlated to the specific rainfall that caused the flow, as RII is dependant on the magnitude and duration of the storm event and other factors.

Modeling may be a valuable tool for providing general predictions of sewer system response to various wet weather events and evaluating control strategies and alternatives. EPA recognizes that there are many models that can accomplish these tasks. These models range from the simple to the complex. When a model is used, it should include calibration and verification with field measurements. EPA believes that

²⁹EPA developed requirements for SSESs under the Construction Grants regulations (40 CFR 35.927-2). The primary purposes of SSESs are to identify the location, estimate flow rate, method of rehabilitation and cost of rehabilitation versus cost of transportation and treatment for each defined source of I/I and provide a proposed rehabilitation program for the sewer system.

³⁰See "Existing Sewer Evaluation and Rehabilitation," Water Environment Federation Manual of Practice FD-6, American Society of Civil Engineers Manual and Report on Engineering Practice No. 62, 1994.

continuous simulation models, using historic rain and I/I data, may be the best way to model sewer systems. The model simulation should be limited to the collection system for which data is provided and for only the range of rainfall data measured. Because of the iterative nature of modeling sewer systems, monitoring and modeling efforts are complementary and should be coordinated. Modeled flow projections should be accompanied by a characterization of the degree of uncertainty as such uncertainty can be significant³¹.

EPA requests comments on whether the Agency should provide guidance or guidelines on characterizing information collected during collection systems evaluations, and if so what kind. For example, the Agency notes that it is often very difficult to interpret and compare I/I values that do not specify the conditions under which the values were observed³². In addition, the Agency requests comment on whether CMOM permit provisions should specify minimum information requirements for evaluations. Such requirements could generally include: estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events; estimates of the capacity of key system components; identification of hydraulic deficiencies, including components of the system with limiting capacity; and identification of the major sources that contribute to the peak flows associated with overflow events.

b. Capacity Enhancement Measures

EPA is proposing that short- and long-term actions to address each hydraulic deficiency be identified in the system evaluation and capacity assurance plan. The plan would have to include an analysis of alternatives. EPA generally encourages permittees to include comprehensive approaches to reducing peak flows in collection systems with complex problems. Measures that reduce peak flow can reduce long-term operating costs and expenses associated with future plant and conveyance expansions. Some peak flow reduction measures can significantly reduce flows at relatively low costs, such as programs to remove illegal connections from private buildings (e.g., sump pumps, area drains and roof drains).

Under today's proposal, system evaluation and capacity assurance plans would have to include a description of how actions were prioritized and estimated schedules for implementing actions. Where a system evaluation and capacity assurance plan addresses multiple

³¹See Heaney, J.P. et al., "Research Needs in Urban Wet Weather Flows", WEF Research Foundation Project 96-IRM-1, February 1998.

³² See Innovative Urban Wet-Weather Flow Management Systems, by Heaney, J., Pitt, R., Field R., EPA cooperative agreement nos. CX824932 & CX 824933, 1999.

hydraulic deficiencies, EPA generally expects that priorities would be based on the human health and environmental risks associated with potential SSOs and the degree to which improvements can be made quickly. Factors that can affect risk are the location of the SSO, potential for human contact, receiving water uses, and the volume of discharge. SSOs that imminently and substantially endanger human health, such as discharges into buildings, to public drinking water supplies, and waters and beaches where swimming occurs, should be given the highest priority.

c. Interim use of Peak Excess Flow Treatment Facilities

EPA has identified a limited number of cases where NPDES permits have been used to authorize or approve infrequent discharges from a peak excess flow treatment facilities (PEFTFs) located in sanitary sewer collection systems. In the past, the NPDES permits issued for PEFTF discharges have used different regulatory constructs.

The Agency has identified permits written for facilities in Texas, California, and New York, that authorize discharges from PEFTFs and do not incorporate effluent limitations based on secondary treatment.³³ EPA requests comments on the existence of NPDES permits authorizing discharges from PEFTFs in other States, and the framework under which those permits were issued, including articulated expectations for how long the facilities were expected to operate.

Under the proposed approach, any permit issued in the future for discharges from a PEFTF that is located in a sanitary sewer collection system would need to include effluent limitations based on the secondary treatment regulation (40 CFR Part 133) and any more stringent limitations necessary to meet water quality standards. The approach outlined below discusses how EPA would address PEFTFs that are not designed to meet effluent limitations based on secondary treatment or any more stringent water quality-based requirements on an interim basis in enforcement actions.

Where a permittee's system evaluation and capacity assurance plan and program audit indicate that elimination of avoidable wet weather SSOs will take a long time (e.g., five to twenty years), EPA recognizes that interim use of a PEFTF to reduce adverse health and/or environmental impacts may be appropriate. EPA requests comment on potential health and/or environmental impacts or benefits of long-term PEFTF use, and on the treatment efficiency of various technologies used for PEFTFs, and how such treatment efficiencies compare to biological treatment systems operating under peak flow conditions.

³³Draft - Performance of Peak Excess Flow Treatment Facilities serving Sanitary Sewer Collection Systems, October, 1999, prepared for US EPA under contract with Science Applications International Corporation.

EPA would apply the following principles for permittees wanting, or needing, PEFTFs:

- \$ The permittee would develop and implement a CMOM program, including a system evaluation and capacity assurance plan and CMOM program audit, which identified specific plans to fix causes of SSOs. Where, based on this evaluation, the permittee demonstrates that a PEFTF would reduce adverse health and/or environmental impacts of untreated SSOs during peak excess flow events, the permittee would notify the NPDES authority and provide the NPDES authority with appropriate analysis, including the system evaluation and capacity assurance plan and program audit report.
- \$ The CMOM program audit and system evaluation and capacity assurance plan of any permittee proposing interim use of a PEFTF would need to demonstrate that no timely feasible alternatives to the PEFTF exist for managing SSOs. Public participation should be used in evaluating feasible alternatives. The approach may take watershed considerations into account.
- \$ Proposals for interim use of PEFTFs to treat peak excess flows would be addressed in an enforcement action unless discharges from the PEFTF could meet all secondary treatment and water quality-based requirements, in which case the discharges could be authorized under the standard permit process. EPA or the State enforcement agency would issue an administrative order (AO) to the facility to ensure plans are implemented. For a permittee proposing interim use of a PEFTF for a period longer than three years, EPA or the State enforcement agency would seek a judicial order (on consent or otherwise). Either the AO or judicial order will identify a date by which discharges from the PEFTF would need to be eliminated. Any remaining discharges after that date would be addressed in the context of applicable permit language (e.g., the prohibition on SSO discharges (based on proposed 40 CFR 122.42(f))). Under the enforcement order from EPA or an authorized NPDES State, the permittee would provide its formal commitment and schedule to carry out the plan to correct problems. The order would also provide a mechanism for stipulating penalties, which may be reduced as appropriate.
- \$ Provisions and requirements of the PEFTFs not meeting effluent limits for secondary treatment and applicable water quality-based requirements could be included in the AO or judicial order. These provisions and requirements could be developed on a case-by-case basis because they would be interim mitigative requirements. The PEFTF would need to be designed to provide protection of public health and, at a minimum, sensitive environmental concerns.

§ The appropriate components of CMOM program should be reassessed at least every five years to assess the progress of implementing the CMOM program and determine whether use of the PEFTF should continue and, if so, whether it should be subject to modified conditions.

Any permittee proposing to utilize a PEFTF that will not comply with effluent limits for secondary treatment and any more stringent limits necessary to meet water quality standards could only do so in the context of the above procedures. These procedures would provide for a fixed date for correction of SSOs related to inadequate peak flow capacity at which point the PEFTF would no longer be needed. Existing permitted PEFTFs could remain under permit until expiration of the permit. Upon expiration of such permits, the permittee could enter into the above process and be covered with an enforcement order if more time is needed to phase out the PEFTF or issued a permit that included effluent limitation for secondary treatment and applicable water quality-based requirements.

J. What is Adequate Capacity for a Municipal Sanitary Sewer Collection System?

In today's proposed rule, the proposed standard permit condition that prohibits SSO discharges contains criteria for evaluating the circumstances related to SSO discharge events that are caused by severe natural conditions. Under the proposed prohibition provision, the NPDES Director may take enforcement action against the permittee for a prohibited SSO discharge caused by natural conditions unless the permittee demonstrates: (1) the discharge was caused by severe natural conditions; (2) there were no feasible alternatives to the discharge; and (3) the permittee complies with the specified notice requirements. This regulatory framework would be used for evaluating if a municipal sanitary sewer collection system provides adequate capacity.

EPA is not proposing minimum numeric criteria for adequate capacity for sanitary sewer collection systems in today's proposed rule. As discussed elsewhere in today's preamble, EPA believes that at this time it is not appropriate for the Agency to develop national minimum numeric criteria for sizing sanitary sewer collection systems or for defining severe natural conditions on which to base sanitary sewer design. Rather, the design capacity for sanitary sewer collection systems should be established based on system-specific considerations, and should be evaluated periodically to ensure that feasible alternatives are being employed.

EPA intends to retain the ability to enforce where SSOs are caused by severe natural conditions for the instances where additional investments in feasible alternatives are warranted by health or

environmental risks. This approach retains the Agency's ability to address health and environmental risks associated with discharges that may occur as the result of severe natural conditions.

The Agency believes that some State and industry guidelines were that historically used for sizing new sanitary sewer components may not be adequate to prevent SSOs under all conditions. In part, this is because the Agency believes these guidelines, particularly when applied to sewers that were built with materials other than those available today, have in some cases used I/I allowances that have underestimated actual levels of I/I that occur under various conditions. This has been due in part to an incomplete or inaccurate understanding of I/I, particularly how I/I changes with changing conditions, and overly optimistic projections of I/I removal. The engineering criteria used for designing older sewers appear to have based on unrealistic expectations on how I/I would impact a complex sanitary sewer collection system and how well I/I could be removed. For these reasons, the Agency does not believe that some sanitary sewers that were originally sized to meet State and industry guidelines, particularly those built to serve older sewers, would necessarily satisfy today's proposed requirements to provide adequate capacity if those sanitary sewers continue to experience high levels of I/I.

K. Should There Be an Alternative CMOM Special Permit Condition For Small Municipal Sanitary Sewer Collection Systems?

In the United States, a relatively few large sanitary sewer collection systems serve a large percentage of the total population served. The distribution of service populations for municipal sanitary sewer collection systems is described in Table 13. Some highlights from the distribution are:

- \$ Municipal sanitary sewer collection systems with service populations of 50,000 or more serve 49 percent of the population that is served by sanitary sewers. There are only about 450 of these systems, however; this is only 2 percent of the number of municipal sanitary sewer systems.
- \$ The remaining 98 percent of municipal sanitary sewer systems, or about 18,500 collection systems, have service populations of less than 50,000.
- \$ About 16,500 or 86 percent of all municipalities with sanitary sewer collection systems have service populations of less than 10,000. These municipalities account for only 20 percent of the U.S. population served by municipal sanitary sewer collection systems.
- \$

\$

Table 13. Distribution of Municipal Sanitary Sewer Collection Systems by Size							
Service population of system	Rough equivalent flow (mgd)	Number of systems	Population served	Percent of total service population	Percent of all systems	Cumulative percentage of total service population	Cumulative percentage of all systems
<1,000	<0.1 mgd	7,466	3,100,000	2%	39%	2%	39%
1,000 - 2,499	0.1 - 0.25 mgd	4,411	6,300,000	4%	23%	6%	62%
2,500 - 4,999	0.25 - 0.5 mgd	2,582	7,900,000	6%	14%	12%	76%
5,000 - 9,999	0.5 - 1 mgd	1,900	11,700,000	8%	10%	20%	86%
Total < 10,000	< 1 mgd	16,359	29,000,000	20%	86%	20%	86%
10,000 - 24,999	1 - 2.5 mgd	1,626	25,300,000	17%	9%	37%	95%
25,000 - 49,999	2.5 - 5 mgd	606	21,100,000	14%	3%	51%	98%
all systems under 50,000	all systems under 5 mgd	18,591	75,400,000	51%	98%	51%	98%

All system 50,000 or more	all systems 5 mgd or more	449	72,600, 000	49%	2%	100%	100%
TOTAL number of systems		19,040	148,000 ,000	100%	100%	100%	100%

Source: 1996 Clean Water Needs Survey (CWNS) Database

1. As a rule of thumb, a residential service population of 10,000 generates an average of 1 million gallon per day (mgd) of wastewater

An important underlying principle to the CMOM requirements in today's proposed rule is that a permittee's program would be tailored to the size and complexity of its collection system. The Agency recognizes that the CMOM programs of small municipalities may be different from those of large municipalities in terms of the types and frequencies of activities. The Agency believes, however, that all municipal sanitary sewer collection systems should be properly managed, operated and maintained, and provide adequate capacity, and that permittees should take all feasible steps to stop and mitigate the impacts of SSOs and to provide appropriate notification.

During the development of today's proposal, EPA held fact finding discussions with selected representatives from 14 small governments. Most small government representatives participating in the fact-finding discussions supported the general principles behind the CMOM provision, but a number of the representatives raised concern about the amount of paperwork associated with the approach and the time needed to prepare the paperwork.

1. Major Options for CMOM Standard Permit Conditions for Small Municipal Sanitary Sewer Collection Systems

EPA requests comment on the following options for establishing a CMOM standard permit condition for small municipal sanitary sewer collection systems.

Option 1 - Same CMOM standard permit condition for all municipal sanitary sewer collection systems

Under this option, EPA would use the same CMOM standard permit condition for all municipal sanitary sewer collection systems regardless of size or occurrence of an SSO discharge. As described above, a permittee would be able to tailor program requirements to the size and complexity of the collection system. In addition, if a permittee believed that any element listed in the CMOM standard condition were not appropriate for the permittee's CMOM program, the program would not have to address that element. For any element listed in the standard condition that was not included in the permittee's CMOM program, the permittee would be required to give an explanation of why that element was not applicable.

Option 2 - Less-detailed CMOM standard permit conditions for small municipal sanitary sewer collection systems

Under this option, the CMOM standard permit condition for specified small municipalities would not be as detailed as the CMOM standard permit condition for other municipalities. Under this approach, the permittee's CMOM program would still have to address appropriate and applicable measures and activities; however, the standard permit condition for small municipalities would not list certain elements. EPA does not propose that this method of drafting would change the substantive requirements of the CMOM provision, but rather would reflect the underlying principle in today's proposal that a permittee's program is to be tailored to the size and complexity of the collection system. While this approach would not change the way CMOM programs were implemented, it may clarify requirements for small systems. An example of how the provision may be written under this approach is provided in the attached text box. EPA seeks comment on how well Option 2 would satisfy the objective of proposing less-detailed CMOM standard permit conditions for small municipalities.

OPTIONS 2 AND 3. Capacity, Management, Operation and Maintenance Programs for Small Sanitary Sewer Systems

(1) General Standards - You, the permittee, must:

- (i) properly manage, operate and maintain, at all times, all parts of collection system that you own or over which you have operational control;
- (ii) provide adequate capacity to convey base flows and peak flows for all parts of the collection system you own or over which you have operational control;
- (iii) take all feasible steps to stop, and mitigate the impact of, sanitary sewer overflows in portions of the collection system you own or over which you have operational control; and
- (iv) provide notification to parties with a reasonable potential for exposure to pollutants associated with the overflow event.
- (v) if an SSO that discharges to waters of the United States occurs from your collection system during the term of the permit, you must develop a written summary of your CMOM program and make it, and the audit under section (5), available to any member of the public upon request.

(2) Management Program - You must develop a capacity, management, operation and maintenance (CMOM) program to comply with paragraph (1). If you believe that any element of this section is not appropriate or applicable for your CMOM program, your program does not need to address it, but your written summary must explain why that element is not applicable. The Director will consider the quality of the CMOM program, its implementation and effectiveness in any relevant enforcement action, including but not limited to any enforcement action for violation of the prohibition of any municipal sanitary sewer system discharges described at 40 CFR 122.42(f). The program must:

- (i) **Goals:** Identify with specificity the major goals of your CMOM program, consistent with the general standards identified above.
- (ii) **Organization:** Identify:
 - (A) administrative and maintenance positions responsible for implementing measures in your CMOM program; and
 - (B) the chain of communication for reporting SSOs under 122.42(g) from receipt of a complaint or other information to the person responsible for reporting to the NPDES authority.
- (iii) **Legal Authority:** Include legal authority, through sewer use ordinances, service agreements or other legally binding documents, to implement your CMOM program.
- (iv) **Measures and Activities.** Your CMOM program must address appropriate measures and activities and identify the person or position in your organization responsible for each measure and activity.
- (v) **Collection System Map** - You must maintain a map of your collection system.
- (vi) **Monitoring, Measurement and Program Modifications.** You must monitor the implementation and, where appropriate, measure the effectiveness of your CMOM program. You must update your program as appropriate based on monitoring or performance evaluations.

(3) Overflow Response Plan: You must develop and implement an overflow response plan that identifies measures to protect public health and the environment by including mechanisms to:

- (i) ensure that you are made aware of all overflows (to the greatest extent possible);
 - (ii) ensure that overflows are appropriately responded to, including ensuring that reports of overflows are immediately dispatched to appropriate personnel for investigation and appropriate response;
 - (iii) ensure appropriate immediate notification to the public, health agencies, other impacted entities (e.g., water suppliers) and the NPDES authority pursuant to 40 CFR 122.42(g). The CMOM should identify the public health and other officials who will receive immediate notification;
 - (iv) ensure that appropriate personnel are aware of and follow the plan and are appropriately trained; and
 - (v) provide emergency operations.
-

OPTION 2. Capacity, Management, Operation and Maintenance Programs for Small Sanitary Sewer Systems
(continued)

(4) **System Evaluation and Capacity Assurance Plan:** You must prepare and implement a plan for system evaluation and capacity assurance if peak flow conditions are contributing to an SSO discharge or to noncompliance at a treatment plant unless you have either (1) already taken steps to correct the hydraulic deficiency or (2) the discharge meets the criteria of 122.42(f)(2). At a minimum the plan must include:

- (i) **Evaluation:** Steps to evaluate those portions of the collection system which you own or over which you have operational control which are experiencing or contributing to an SSO discharge caused by hydraulic deficiency or to noncompliance at a treatment plant. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, provide estimates of the capacity of key system components, identify hydraulic deficiencies, including components of the system with limiting capacity, and identify the major sources that contribute to the peak flows associated with overflow events.
- (ii) **Capacity Enhancement Measures:** Establish short and long term actions to address each hydraulic deficiency including prioritization, alternative analysis, and a schedule.
- (iii) **Plan updates:** The plan must be updated to describe any significant change in proposed actions and/or implementation schedule. The plan must also be updated to reflect available information on the performance of measures that have been implemented.

(5) **CMOM Program Audits** - If an SSO that discharges to waters of the U.S. occurs from your collection system during the term of this permit, you must conduct an audit, appropriate to the size of the system and the number of overflows, and submit a report of such audit, evaluating your CMOM and its compliance with this subsection, including its deficiencies and steps to respond to them.

(6) **Communication** - The permittee should communicate on a regular basis with interested parties on the implementation and performance of its CMOM program to allow input as the CMOM program is developed and implemented.

Option 3 - Limit documentation requirements for small municipal sanitary sewer collection systems that meet specified criteria

Under this option, the CMOM standard permit condition for small municipalities would contain the general standards and management program sections that are proposed for other municipalities. Some of the documentation requirements in the CMOM standard permit condition for small municipalities would only apply if specified criteria were met, however. For example, the standard permit condition could be written so as to not require a small municipality to either provide a written program summary or conduct a program audit if the permittee has not experienced an SSO that discharges to waters of the United States during the permit term. Another option would be to exempt a small municipality from these documentation requirements even if it did experience an SSO discharge to waters of the U.S. Under such approaches, if appropriate, the NPDES authority could include more stringent requirements in a permit, or require a written program and/or an audit pursuant to other authorities such as the information-gathering authorities under CWA section 308 or analogous State law. EPA seeks comment on the appropriateness of such approaches.

Option 4 - Only permits for targeted small municipal sanitary sewer collection systems contain CMOM requirements

Under this approach, not all permits for municipal sanitary collection systems would have to contain CMOM provisions. The NPDES authority would not have to include the CMOM provision in a permit for a small municipal collection system if the NPDES authority determined the system met specified criteria. The criteria could include the performance of the collection system or the presence of an alternative State requirement determined to be either the functional equivalent of the proposed CMOM provision or otherwise determined to be effective.

2. Approach Favored in Today's Proposal

In today's proposed rule, EPA is proposing that the CMOM standard permit conditions for small collection systems would differ in two ways from the CMOM standard permit condition for larger collection systems. First, EPA is proposing that a collection system with an average daily flow of less than 2.5 million gallons per day (mgd) would not be required to develop a written CMOM program summary or a CMOM program audit until it experiences an SSO discharge to waters of the United States from its collection system. The permit would specify the time period after the SSO discharge during which the CMOM program summary and

the CMOM program audit would need to be completed. Section III.L.3 of today's preamble discusses recommendations for such timing. The Agency requests comment on these timing recommendations.

The second proposed difference for small collection systems is that the CMOM standard permit condition could be less detailed in permits for municipal sanitary sewer collection systems with an average daily flow of less than 1 mgd. EPA is proposing that the CMOM condition in permits for municipal systems with an average daily flow of 1.0 million gallons per day or less need not specifically list the following elements from the proposed standard permit condition for other municipalities:

- \$ (e)(2)(iii)(A): Specific legal authority to control inflow and connections from inflow sources;
- \$ (e)(2)(iii)(B): Specific legal authority to require proper design and construction of sewers and connections;
- \$ (e)(2)(iii)(C): Specific legal authority to ensure proper installation, testing, and inspection of new and rehabilitated sewers (such as new or rehabilitated collector sewers and new or rehabilitated service laterals);
- \$ (e)(2)(iii)(D): Specific legal authority to address flows from municipal satellite collection systems;
- \$ (e)(2)(iii)(E): Specific legal authority to implement the general and specific prohibitions of the national pretreatment program;
- \$ (e)(2)(iv)(A): Identification of how the permittee will provide adequate maintenance facilities and equipment;
- \$ (e)(2)(iv)(C): Management of information and use of timely, relevant information to establish and prioritize appropriate CMOM activities and identify and illustrate trends in overflows;
- \$ (e)(2)(iv)(D): Routine preventive operation and maintenance activities;
- \$ (e)(2)(iv)(E): A program to assess the current capacity of the collection system and treatment facilities;
- \$ (e)(2)(iv)(F): Identification and prioritization of structural deficiencies and identification and implementation of short-term and long-term rehabilitation actions to address each deficiency;
- \$ (e)(2)(iv)(G): Appropriate training on a regular basis; and
- \$ (e)(2)(iv)(H): Equipment and replacement parts inventories including identification of critical replacement parts.

EPA believes that this less detailed language will be less confusing and will help smaller municipalities understand the flexibility provided by the proposed approach.

In addition, EPA is proposing that the NPDES authority be able to modify or exclude the requirements at proposed paragraph (e)(2)(v) of this section, which would require the permittee to establish requirements and standards for the installation and testing of new sewers, pumps and other appurtenances; and rehabilitation and repair projects, in cases where small collection systems are not expected to have significant new installations of sewers, pumps and other appurtenances. EPA requests comments on whether these or other simplifications are appropriate.

Under the proposal, all permittees, regardless of their size and whether the system has experienced an SSO, would be required to develop an overflow emergency response plan. EPA believes that overflow emergency response plans should be required for all municipal sanitary sewer collection systems, including those which have not experienced an overflow, because of the permittee's potential role and responsibilities in responding to overflow events.

When characterizing the average daily flow, flows for an entire year should be considered since the average daily flow can vary significantly from season to season due to different levels of I/I or other seasonal factors (e.g., high seasonal tourism). For this reason, at least one year of flow information should be considered in determining the average daily flow.

3. What Thresholds are Appropriate for Defining the Applicability of the CMOM Standard Permit Condition for Small Municipal Sanitary Sewer Collection Systems?

EPA believes that a number of factors are generally important for identifying small municipalities including the number and type of staff assigned to collection system operations and size of the resource base. In general, the Agency believes that average daily flow is an appropriate parameter for defining such a threshold, as it is an appropriate indicator of the size of the system. The Agency is concerned about using residential service populations as a threshold because such a criterion would not adequately characterize any additional industrial contributions to the collection system. EPA believes that flows can be characterized at pump stations and treatment facilities. EPA requests comments on whether permittees, particularly operators of small municipal satellite collection systems, will have difficulty in characterizing the average daily flow.

EPA is considering a number of alternatives for defining the various thresholds for CMOM requirements for small municipal sanitary sewer collection systems and requests comments on those and other alternatives. Potential thresholds could include average daily flows of 7.5 mgd, 5 mgd, 2.5 mgd, and 1 mgd. In particular, the Agency requests comment on administrative and technical aspects of managing a collection system that should be considered in developing threshold criteria. For example, what are typical staff sizes and engineering capabilities for the different size thresholds?

For the purpose of these thresholds, the average daily flow of the permittee's collection system would include flows from portions of the collection system that are not under direct operational control of the permittee. For example, where the permittee only has operational control over major interceptors and receives flow from satellite collection systems that are owned and operated by another entity, the average daily flow of the permittee's collection system would include the average daily flows of any satellite collection system conveying wastewater to the permittee's interceptor.

An average daily flow of 7.5 mgd is roughly equivalent to a residential service population of 75,000. EPA used a population threshold of 75,000 in the Combined Sewer Overflow (CSO) Control Policy to provide guidance on the applicability of certain long-term planning requirements (see 59 FR 18688 (April 19, 1994)). Under the CSO Control Policy, the NPDES authority has discretion to not require jurisdictions with populations under 75,000 to complete all the formal steps for long-term control plans described in the policy (e.g., characterization, monitoring and modeling of the collection system, evaluation of alternatives, cost/performance considerations).

An average daily flow of 5 mgd is roughly equivalent to a residential service population of 50,000. Five mgd is used as one of the criteria for determining when a POTW must develop and implement a pretreatment program (see 40 CFR 403.8). The 5-mgd criterion is also consistent with the Regulatory Flexibility Act, which uses a population threshold of 50,000 to define small governments.

An average daily flow for 2.5 mgd is roughly equivalent to a residential service population of 25,000. EPA is proposing that 2.5 mgd be used as the threshold for defining the applicability of the CMOM standard permit condition for small municipal sanitary sewer collection systems.

An average daily flow of 1 mgd is roughly equivalent to a residential service population of 10,000. The 1-mgd criterion would be consistent with the Agency's major/minor classification scheme which is

used in prioritizing enforcement and permitting approaches. The Agency has found this threshold to provide a workable distinction for NPDES authorities in establishing such priorities. EPA is proposing to use 1 mgd as the threshold for triggering streamlined aspects of CMOM requirements. The Agency does not propose to alter the existing programmatic thresholds under the NPDES program, regardless of final action on today's proposal.

L. Timing of CMOM Program Implementation

The NPDES permit would specify requirements for a permittee to properly operate and maintain its collection system and take steps to mitigate the impacts of SSOs. As discussed above, at a minimum, NPDES permits already must contain the "duty to mitigate" and "proper operation and maintenance" standard permit conditions at 40 CFR 122.41(d) and (e), respectively. In today's proposed rule, EPA is proposing comprehensive CMOM requirements that, when included in a permit, would clarify requirements for proper operation and maintenance of the permittee's collection system and for responding to SSOs.

1. Immediate Compliance with General Performance Standards

After the new CMOM language is first added to a permit, the permittee would be expected to immediately comply with four of the general standards proposed under 40 CFR 122.41(e)(1), including the requirement to develop and implement a program to ensure compliance with these standards. These general standards are a continuation of existing NPDES requirements.

2. Notification of Parties with a Reasonable Potential for Exposure

Another CMOM general standard would require the permittee to provide notification that would be available to parties with a reasonable potential for exposure to pollutants associated with the overflow event. In permits where this would be a new requirement, it may be appropriate to coordinate the implementation of the fifth general standard with the development of an overflow emergency response plan.

3. Deadlines for CMOM Documentation Requirements

The proposed CMOM standard permit condition contains a number of documentation requirements. The first permit for a collection system that contains a CMOM condition would establish specific deadlines for the initial completion of:

- \$ A written summary of the CMOM program;
- \$ A map of the collection system;

\$ A written overflow emergency response plan;
\$ The CMOM program audit report;
\$ A report summarizing the results of a program audit; and
\$ Where necessary, a written system evaluation and capacity assurance plan.

Deadlines for these activities in the first permit containing a CMOM provision could be established on a case-by-case basis. General recommendations for deadlines are provided in Table 14. While EPA is providing general recommendations for deadlines, the Agency expects that other factors, such as the severity of SSO problems, the degree of health and/or environmental risks, and the similarity of existing State requirements for collection systems also would play a role in the NPDES authority's establishing of initial compliance deadlines for new documentation requirements in a specific permit.

Today's proposed CMOM standard permit condition would require a permittee to submit a CMOM program audit report with its permit application. As proposed, this requirement would not initially become effective until the CMOM provision was incorporated into a facility's permit. Thus, a program audit would not be required for the permit application that proceeded the permit that initially contained the CMOM standard permit condition. This approach allows for the permittee's program audit to be coordinated with the initial development and implementation of the permittee's CMOM program.

After the CMOM audit provision is incorporated into a permit for the first time, EPA recommends that the permit should require development of an audit report relatively early after permit issuance. An audit at this time would provide a detailed assessment of the permittee's existing program and identify any deficiencies early in the term of the first permit with CMOM program requirements. The Agency believes an early program assessment will be important for guiding the development and implementation of the permittee's CMOM program. To maintain consistency with today's proposed CMOM standard permit condition, the first permit with CMOM program requirements could provide that the audit report would be submitted with the permit renewal application. This submittal would give the NPDES authority the opportunity to review the audit during the permit renewal process. Where the first permit with CMOM program provisions requires the permittee to prepare an audit report early in the permit term, the permit authority could either allow the permittee to submit the initial audit report with the permit application (which is due four and one half years after permit issuance) or require the permittee to update the audit report prior to submission with the permit application.

EPA requests comment on an alternative approach for the timing of audit submission which would incorporate the CMOM program audit as a permit application requirement under proposed 40 CFR 122.38(c)(3). If the requirement to submit an audit was included in the proposed permit application requirements at 122.38(c)(3), it would impact the timing of the permittee's first audit after the promulgation of these proposed regulations. Under this alternative approach, the permittee would have to conduct a CMOM program audit after the regulation is promulgated, but before the CMOM standard permit condition is incorporated into their permit. The Agency is concerned about the possible confusion among the regulated community that might arise under this approach.

The Agency recommends that CMOM program summaries either be prepared within the same time frames as CMOM program audit reports or before audit reports are due. The Agency believes that accurate CMOM program summaries are generally necessary for conducting comprehensive program audits. If the audit is conducted after the program summary is complete, the program summary should be modified to reflect recommendations stemming from the audit.

The Agency is recommending earlier dates for submission of program audits for larger municipalities. This approach recognizes that larger municipalities generally have more resources, compared to other municipalities, to conduct an audit. The approach also is intended to encourage larger municipalities to take a leadership role in developing audit protocols and to work with smaller municipalities to give them a better understanding of how to conduct an audit and the benefits of the audit process.

Overflow emergency response plans would require coordination with other entities such as public health agencies, drinking water suppliers and others. While the Agency recommends that the coordination process begin as soon as possible, the recommended time frames are intended to recognize that such coordination may require significant time.

System evaluation and capacity assurance plans are expected to require a significant amount of data gathering and analysis as well as public involvement. The development of plans could be phased to allowing focusing on priority areas of the collection system first.

In addition to the documentation discussed above, today's proposed CMOM program would call for permittees to maintain a map of the collection system. Many municipalities are expected to have an adequate map of the collection system in place, and this requirement would focus on their maintenance (updating) of the map. Other municipalities will not currently have an adequate map of their collection system. In this case, the NPDES authority could consider establishing a deadline in the

permit for initial upgrade of the collection system map on a case-by-case basis.

EPA requests comments on the recommended general deadlines for different CMOM program documentation requirements and the role system-specific factors could play in establishing deadlines in the initial permit containing a CMOM condition. One approach upon which EPA requests comments is to consider performance of the permittee's collection system and general level of compliance when developing deadlines for CMOM requirements. This approach may provide additional incentives to permittees with strong performance records by reducing administrative costs associated with the timing for development of CMOM programs.

Table 14. Recommended Deadlines for CMOM Documentation Requirements for Initial Permit to Contain CMOM condition

Average daily flow	Summary of CMOM program	Overflow Emergency Response Plan	Completion of Program Audit Report	Submission of Program Audit Report	System Evaluation and Capacity Assurance Plan (if required)
5 mgd or more	Within 18 months of permit issuance	Within 1 year of permit issuance	Within 18 months of permit issuance	Within 18 months of permit issuance	Initial subbasins within 3 years of permit issuance. All subbasins with 5 years of permit issuance
Less than 5 mgd but more than 1 mgd	Within 2 years of permit issuance	Within 1 year of permit issuance	Within 2 years of permit issuance	With permit renewal application	Initial subbasins within 3.5 years of permit issuance. All subbasins with 5 years of permit issuance
1 mgd or less	Within 3.5 years of permit issuance	Within 1 year of permit issuance	Within 3.5 years of permit issuance	With permit renewal application	Within 5 years of permit issuance

NOTE: For the purpose of this table, the total service population of the permittee's collection system includes service populations that are not under direct operational control of the permittee. For example, where the permittee only has operational control over major interceptors and receives flow from satellite collection systems that are owned and operated by another entity, the service population of the permittee's collection system would include service populations of any satellite collection system conveying wastewater to the permittee's interceptor.

NOTE: The NPDES authority retains the authority to request an audit report prior to submission with the permit application.

4. Timing of Significant Capital Investments

Under the proposed CMOM standard permit condition, two provisions specifically address situations that may require significant capital investment by the permittee:

\$ Rehabilitation actions - Permittees would be required to implement an ongoing program to identify and prioritize structural deficiencies and identify and implement short-term and long-term rehabilitation actions to address each deficiency.

\$ Capacity enhancement measures - Where peak flow conditions contribute to an SSO discharge, the permittee would need to prepare a plan, including a proposed implementation schedule, for system evaluation and capacity assurance, including short and long-term actions to address each hydraulic deficiency identified.

Appropriate sewer rehabilitation is necessary to maintain the structural integrity of a sewer system and to reduce the hydraulic loads of the system. Capacity enhancement, which can include rehabilitation as well as other structural modifications to the collection system, is necessary where peak flow conditions contribute to an SSO discharge or cause compliance problems at the treatment plant. Structural and hydraulic problems are often closely related. Both rehabilitation and capacity enhancement typically involve a complex, dynamic process of identifying problems, evaluating the system, identifying appropriate measures, and implementing those measures. EPA requests comment on whether this approach provides the permittee with adequate time to develop information on the number, location and volume of SSO events to be able to develop an effective response.

Under today's proposal, EPA would require the CMOM program to include a description of the permittee's proposed schedule for implementing short- and long-term rehabilitation and capacity assurance measures. In the absence of a previously-existing enforcement order that includes a schedule for capital improvement measures, the permittee's schedule for short-term and long-term rehabilitation actions and capacity enhancement measures would initially reflect logical engineering sequencing and normal construction practices, with modifications to accommodate system-specific factors such as:

- \$ Health risks - Overflows (or potential overflows) that pose the highest health risks should be addressed first;
 - \$ Use impairment;
 - \$ The permittee's financial capability;³⁴
 - \$ Grant and loan availability;
 - \$ Previous and current residential, commercial and industrial sewer use fees and rate structures;
 - \$ Other viable funding mechanisms and sources of financing;
 - \$ Previous and current expenditures on collection systems;
 - \$ Whether the municipality has assumed responsibility for portions of the collection system from another municipality and the time frame under which such responsibility accrued; and
 - \$ Other water pollution control obligations of the municipality.
- Other considerations for schedules include:
- \$ Schedules should provide time for conducting appropriate evaluations, surveys and studies;
 - \$ Different schedules can be provided for activities within different portions of the collection system. Where a permittee proposes different schedules for different sewersheds, the different schedules should generally reflect the different health risks posed;
 - \$ Where the schedule for investments in the sanitary sewer collection system is altered by consideration of funding for other water pollution control projects (e.g., addressing deficiencies with treatment plants, CSO control, replacing septic systems; storm water control; restoration of aquatic habitat or flow

³⁴Financial capability may include a consideration of median household income; total annual water pollution control costs per household as a percent of median household income; overall net debt as a percent of full market property value; property tax revenues as a percent of full market property value; unemployment; and bond rating. Combined Sewer Overflows-Guidance for Financial Assessment and Schedule Development, EPA, 1997 provides guidance on assessing financial capacity in the context of schedule development. While the guidance was developed to help permittees schedule capital improvements to control combined sewer overflows, the concepts in the guidance are generally applicable for scheduling capital improvements for municipal sanitary sewer collection systems.

regimes), the permittee should consider the relative health risks being addressed by the various projects; and

\$ Schedules may allow for conducting pilot studies of innovative approaches.

EPA requests comment on the factors that should be considered in developing capital improvement schedules for short- and long-term remedial activities and capacity assurance.

The permittee should provide appropriate documentation of the rationale used to develop the proposed schedule, particularly where the proposed schedule includes time to address individual watershed priorities, financial capability, difficult institutional issues or innovative approaches. The extent and degree to which the permittee has employed these factors in developing its CMOM schedules would be taken into account in any NPDES enforcement action.

M. How Could the Watershed Alternative be Integrated into NPDES Permit CMOM Program Requirements?

EPA believes that today's proposed CMOM program requirements should allow for integration of certain aspects of the approach outlined in the 1998 Watershed Alternative along with risk management classifications used by the sewer industry. Industry and EPA guidance recognize prioritizing collection system management activities based on risk. These approaches involve classifying sewers based on the risks to human health or the environment that the sewer presents. Risk-based sewer classifications include the "critical sewer" approach and the "reliability class" approach.³⁵ These approaches prioritize collection system measures in portions of the collection system whose failure would have a particularly significant impact on public health or the surrounding environment.

In today's proposed rule, EPA is proposing that permittees be made responsible for developing and implementing CMOM programs for their municipal sanitary sewer collection systems. EPA supports the assessment of overall health and environmental risks from SSOs and other urban wet weather sources to inform the development of CMOM programs. CMOM programs can reflect watershed considerations in two general ways: (1) CMOM activities may be prioritized based on risk; and (2) other water quality improvement projects in the permittee's capital improvement plan may be considered when developing schedules for long-

³⁵For examples, see "Existing Sewer Evaluation & Rehabilitation," WEF Manual of Practice FD-6, ASCE Manual and Report on Engineering Practice no. 62, 1994; Construction Grants 1985, EPA, 1984, EPA/430/9-84/004; "Sewerage Rehabilitation Manual" Water Research Centre, 1994; Combined Sewer Overflow Screening and Ranking Guide, EPA, 1995, EPA/882/B/95/004.

term measures. These include addressing deficiencies with treatment plants, combined sewer systems, replacing septic systems with sanitary sewer collection systems; assuming responsibility for inadequate privately owned treatment works and collection systems; storm water control; and restoration or protection of aquatic habitat or flow regimes.

1. Prioritization of CMOM Activities

In general, public health and watershed considerations are expected to play a role in setting system-specific priorities in CMOM programs. Risk-based prioritizing schemes, such as the critical sewer and/or reliability class approaches, can be reflected in various aspects of a CMOM program, such as the extent of backup equipment and power, frequency and type of preventive maintenance activities, procedures to evaluate structural integrity and hydraulic capacity, and in phasing of long-term activities. EPA requests comment on the appropriate relationship of water quality objectives identified in a watershed plan to performance objectives for the municipal sanitary sewer collection system and the phased implementation of those performance objectives. The Agency also requests comment on how NPDES authorities should relate water quality objectives to the criteria in today's proposed prohibition standard condition (e.g., exercise of reasonable control, no feasible alternatives), and on whether the proposed prohibition should be modified to accommodate a greater role for water quality and watershed considerations in the SSO planning process.

2. Role of Other Water Quality Improvement Projects in the Permittee's Capital Improvement Plan in Developing Priorities for Long-Term Activities

Under today's proposed CMOM program requirements, permittees would be required to identify long-term actions they have planned to address hydraulic and structural deficiencies and CMOM schedules for the actions (see proposed 122.42(e)(2)(iv)(F) and 122.42(e)(4)(ii)).

Where long-term actions are needed to address SSO problems, EPA would allow municipalities to consider other water quality improvement projects when developing CMOM schedules for long-term capital improvements. General principles that apply to this approach would be that:

\$ The operator of the collection system would need to implement a capital improvement plan that would be expected to result in substantial investment in water quality improvements (which may include projects other than sanitary sewer measures) during and

after the planning process. The capital improvement plan would need to be developed consistent with EPA's accepted scheduling principles and prioritization schemes, including financial capability, and generally reflect health and environmental risks;³⁶

- \$ The operator of the collection system would need to effectively implement a CMOM program for the collection system, including a process for comprehensive assessment of the management, operation and maintenance of the collection system, and identifying and prioritizing capital needs associated with structural and hydraulic deficiencies;
- \$ Comprehensive watershed planning that takes into account a variety of pollutant sources should not delay the response to ongoing SSOs that cause or contribute significantly to public health or water quality problems. Whenever public health or water quality problems are clearly attributable to ongoing SSOs and the actions needed to address them are also clear, then remedial actions to address the SSOs should proceed as soon as physically and financially possible. These overflows would not be addressed in the context of watershed plans. Overflows that should not be subject to delays for investment because of other water quality improvements include:
 - o Wastewater backups into buildings;
 - o Overflows to waters of the U.S. that occur in high public use or public access areas;
 - o Overflows that impact sensitive receiving waters (such as public drinking water supplies and their source waters, swimming beaches and waters where swimming occurs, shellfish beds, designated Outstanding National Resource Waters, National Marine Sanctuaries, waters within Federal, State, or local parks, and water containing threatened or endangered species or their habitat).
- \$ Other SSOs could, upon approval of the NPDES authority and notice to other stakeholders, be prioritized in the context of watershed plans. The watershed planning process can be used to identify and prioritize pollutant sources that are causing or contributing to public health or water quality problems. The watershed planning process should be used to identify priorities for measures to

³⁶ See Combined Sewer Overflows-Guidance for Financial Capability Assessment and Schedule Development, March 1997. While the guidance was developed to assist permittees in scheduling capacity improvements for combined sewers, the concepts in this guidance are generally applicable for scheduling capital improvements for municipal sanitary sewer collection systems.

address these problems, including long-term actions. This in turn should result in appropriate modification to capital investment plans. Where possible, investment strategies for water quality improvements should be prioritized in a manner that provides the greatest opportunities for health and environmental improvements as early in the process as possible. A watershed plan does not provide any additional liability protection or change the legal status of discharges to waters of the United States, but could affect the timing of remedies.

\$ The schedule for long-term actions in the CMOM program for the municipal sanitary sewer collection system should be accompanied by a description of other water quality improvement projects identified in the permittee's capital improvement plan, the costs and schedules for those projects and available information on the relative health risks addressed by the various projects identified in the plan.

This approach is intended to provide municipalities with flexibility to implement comprehensive water quality improvement efforts in the most efficient manner.

As discussed elsewhere in today's proposed rule, the permittee's schedule for long-term activities in its CMOM program would not provide any additional liability protection or change the legal status for SSOs that occur. Rather, the status of a specific discharge would be evaluated according to the permit prohibition language and the circumstances under which the discharge occurred. The purpose of the CMOM schedule would be to provide the NPDES authority and other reviewers with information related to how and when sanitary sewer activities (and possibly other water quality improvement projects) would be implemented. Including additional information regarding other water quality improvement projects would allow the NPDES authority to evaluate the permittee's overall investments in water quality improvement. Enforcement mechanisms such as administrative or judicial orders are more likely to provide the necessary flexibility to implement watershed management concepts.

In individual judicial actions where a municipality is negotiating in good faith, injunctive relief sought should be comprehensive in addressing wet weather CSO, SSO, and storm water problems (and potentially other municipal compliance problems) within the municipality's watershed. These global settlements of wet weather violations may only be possible if a municipality has a final watershed plan. Enforcement remedies should not be delayed by watershed plan development. Watershed plans can be taken into account when developing

enforcement schedules for bringing unauthorized or unpermitted discharges into compliance with the CWA, but watershed plans (including the planning process) are not a bar to enforcement for violations of the CWA.

The Agency requests comment on the role of watershed considerations in CMOM program implementation. In addition, the Agency requests comment on whether specific language supporting these approaches should be incorporated into today's proposed CMOM and prohibition standard permit conditions.

N. How Would NPDES Authorities Evaluate Compliance with These Requirements?

NPDES compliance and enforcement authorities primarily would be concerned with whether a permittee is fulfilling the obligations established by its permit conditions C e.g., whether reports are submitted as required, or whether the facility is undertaking required activities. The Agency recognizes that the permittee's selection of measures should be tailored to the size and complexity of the collection system and based on site-specific considerations including the specific characteristics of the sewer system. With respect to compliance with the general standards in today's proposed CMOM provision and implementation of various related program requirements, an underlying principle guiding today's rule is that NPDES authorities would use generally accepted industry and State practices as guidelines for evaluating whether a permittee is in compliance. Table 15 provides a limited summary of sample references to generally accepted industry practices and guidelines for different classes of measures. Table 15 is not all-inclusive and in general does not address State practices and guidelines.

Table 15. Summary of Major Industry Technical References

Measure	Technical References
Identify and track discharges	<u>Sewer System Infrastructure Analysis and Rehabilitation Handbook</u> , EPA, 1991
Overflow emergency response plans	<u>Guidebook for Local Governments: Preparing Sewer Overflow Response Plans</u> , APWA, 1999
Public notification	<u>Combined Sewer Overflows - Guidance for Nine Minimum Controls</u> , EPA, May 1995, EPA 832-B-95-003
General management, operation and maintenance	<p><u>Wastewater Collection Systems Management</u>, Manual of Practice No 7, Water Environment Federation, fifth edition, 1999.</p> <p><u>Operation and Maintenance of Wastewater Collection Systems, a field study training program</u>, Fourth edition, California State University, Sacramento, 1993.</p> <p><u>Control of Infiltration and Inflow in Private Building Sewer Connections - Monograph</u>, Water Environment Federation, 1999.</p> <p><u>Manual of Practices- Wastewater Collection Systems</u>, NASSCO, 1995</p> <p><u>Detection, Control and Correction of Hydrogen Sulfide Corrosion in Existing Wastewater Systems</u>, EPA-832-R-92-001, Sept, 1992</p>

Capacity evaluations, actions to ensure adequate capacity and rehabilitation	<p><u>Sewer System Infrastructure Analysis and Rehabilitation Handbook</u>, EPA, 1991</p> <p><u>Existing Sewer Evaluation & Rehabilitation</u>, WEF manual of practice FD-6, ASCE Manual and report on engineering practice no. 62, 1994</p> <p><u>Sewerage Rehabilitation Manual</u>, 3rd ed., Water Research Centre, 1994.</p> <p><u>Inspector Handbook for Sewer Collection System Maintenance and Rehabilitation</u>, NASSCO, 1993</p> <p><u>Manhole Inspection and Rehabilitation</u>, ASCE Manuals and Report on Engineering Practice No. 92, 1997</p> <p><u>Specification Guidelines for Wastewater Collection Systems Maintenance and Rehabilitation</u>, 9th ed., NASSCO, 1996</p> <p><u>Monograph: Control of Infiltration/Inflow (I/I) In Private Sewer Service Connections</u>, WEF, 1999</p> <p><u>Demonstration of Service Lateral Testing and Rehabilitation Techniques</u>, EPA, 1985</p> <p><u>Handbook for Sewer System Evaluation and Rehabilitation</u>, EPA, 1975, EPA/430/9-75/021</p>
Sewer use ordinance - Testing of new sewers	<p><u>Demonstration of Service Lateral Testing and Rehabilitation Techniques.</u>, EPA, 1985</p> <p><u>Gravity Sanitary Sewer Design and Construction</u>, ASCE manual and report on engineering practice no. 60 and WPCF manual of practice no FD-5, 1982.</p>

Performance indicators	<p><u>Collection Systems: Methods for Evaluating and Improving Performance</u>, California State University, Sacramento, 1998.</p> <p><u>Optimization of Collection System Maintenance Frequencies and System Performance</u>, ASCE, 1999.</p> <p><u>Benchmarking Wastewater Operations-Collection, Treatment, and Biosolids Management</u>, WERF, Project 96-CTS-5, 1997</p> <p><u>Benchmark '95: Wastewater Collection Agencies: An Analysis of Survey Data</u> Charlotte-Mecklenberg Utility Department, 1995</p> <p>Stalnaker, R. and M. Rigby, "Evaluating the Effectiveness of Wastewater Collection System Maintenance." <u>Water Engineering Management</u>, January 1997</p>
------------------------	---

<p>General design issues</p>	<p><u>Construction Grants 1985</u>, EPA, 1984, EPA/430/9-84/004</p> <p><u>Recommended Standards for Wastewater Facilities</u>, 1990, A report of the wastewater committee of the Great Lakes-Upper Mississippi River Board of State Public Health and Environmental Managers.</p> <p><u>Technical Report 16 - Guides for the Design of Wastewater Treatment Works</u>, 1998, New England Interstate Water Pollution Control Commission.</p> <p><u>Pumping Station Design</u>, 2nd ed, Sanks, 1998</p> <p><u>Design of Wastewater and Stormwater Pumping Stations - MOP FD-4</u>. WEF, 1993.</p> <p><u>Wastewater Engineering: Collection and Pumping of Wastewater</u>. Metcalf & Eddy, Inc., McGraw-Hill, 1981.</p> <p><u>Design and Construction of Sanitary & Storm Sewers - MOP 9</u>. Water Pollution Control Federation , 1969.</p> <p><u>Design Manual for Odor and Corrosion Control in Sanitary Sewerage Systems and Treatment Plants</u>, EPA/625/1-85/018, October 1985</p>
------------------------------	--

The Agency is in the process of developing guidance for NPDES compliance and enforcement authorities to assist in evaluation of CMOM programs. The guidance is expected to identify a variety of areas to be examined during an inspection or other fact-finding exercise. EPA requests comments on the role of performance indicators to track system performance and key activities in evaluating compliance.

O. Does Meeting CMOM Requirements of a Permit Limit Liability for SSOs that Occur?

Compliance with CMOM permit requirements generally would not limit liability for sanitary sewer overflow discharges. The legal status of a specific discharge is related to the permit language and the circumstances under which the discharge occurs. Today EPA is proposing a standard permit condition which would clarify that SSOs that discharge to waters of the United States are prohibited. The proposed prohibition also would provide a framework for identifying the limited circumstances when the NPDES authority would not bring an enforcement action or when the permittee may establish an affirmative defense. While compliance with CMOM program requirements would not in itself limit liability for SSO discharges, the Director would consider the quality of the CMOM program, its implementation, and effectiveness when exercising prosecutorial discretion and developing enforcement priorities for prohibited SSO discharges.

P. Would the NPDES Authority Approve CMOM Programs Developed Under the Standard Permit Condition?

EPA is not proposing that NPDES authorities approve entire CMOM programs developed under the standard permit condition. The Agency is concerned that an approval process would focus on specific measures in a permittee's CMOM program, such as a sewer cleaning frequency, rather than on the process the permittee has in place for developing, implementing, evaluating and modifying its program. The Agency believes that approval of the entire CMOM program is generally not appropriate because approval by the NPDES authority may reduce the flexibility of the approach and may be inconsistent with a program's need to evolve and modify to reflect changing conditions and new information. Program approval may also limit the Agency's discretion in seeking enforcement remedies. In addition, approval of programs by the permitting authority may introduce significant delays in CMOM program implementation if a permittee waits on program approval prior to implementing the program.

The Agency requests comments on how lack of CMOM program approval might impact the permittee's implementation of its program. In particular, would the proposed approach impact the ability of the

permittee to obtain funding? The Agency invites comment on whether any specific aspects of a CMOM program, such as a determination of adequate capacity, should be approved under the permit process and whether there are any circumstances when the regulatory agency should formally approve aspects of the permittee's CMOM program.

Q. Would the Proposed Standard Condition Provide Enough Flexibility to the NPDES Authority?

EPA is aware that a number of States currently provide extensive regulatory oversight over sanitary sewer collection systems either under the NPDES program or an alternative State program. Where appropriate, the authorized NPDES States may omit or modify standard permit conditions to impose more stringent requirements (see 40 CFR 123.25). In other cases, EPA believes that authorized NPDES States with existing collection system oversight efforts can modify those efforts to fit the CMOM framework.

R. Would the Existing Operation and Maintenance Standard Conditions Still Apply to Municipal Sanitary Sewer Collection Systems After EPA Takes Final Action on This Proposed Regulation?

The requirements for a permittee to properly operate and maintain its collection systems are specified in the NPDES permit. As discussed above, all existing permits should, at a minimum, contain the "proper operation and maintenance" standard condition at 40 CFR 122.41(e) and the "duty to mitigate" standard permit condition at 40 CFR 122.41(d). Finalization of today's proposed requirements would not change permit requirements until the permit is reissued. Permittees remain obligated to comply with their existing permits until the permits are modified. After EPA takes final action on this regulation, permits for POTWs and other sanitary sewer collection systems that are issued or reissued would need to incorporate the newly-promulgated CMOM standard permit conditions. In portions of the reissued permit where CMOM applies, the new CMOM standard condition would supercede the existing standard condition. In portions of the permit where CMOM does not apply, the existing standard conditions for "proper operation and maintenance" and "duty to mitigate" would remain in effect.

IV. PROPOSED PROHIBITION OF DISCHARGES FROM MUNICIPAL SANITARY SEWER COLLECTION SYSTEMS

A. What Would the Proposed SSO Prohibition Standard Permit Condition Do?

Today's proposed standard permit conditions for municipal sanitary sewer collection systems include a prohibition provision. The proposed language would clarify that discharges to waters of the United States from a municipal sanitary sewer collection system that occur prior to a publicly owned treatment works (POTW) treatment facility are prohibited. In proposing this standard condition, the Agency notes that even municipal collection systems that are operated in an exemplary fashion may experience unauthorized discharges under exceptional circumstances. Therefore, today's proposed prohibition provides a framework for evaluating the specific circumstances of overflows from a municipal sanitary sewer collection system that result in a discharge to waters of the U.S. and consideration of those circumstances to excuse those discharges, either through the exercise of enforcement discretion or through establishment of an affirmative defense. Today's proposed prohibition standard condition would not require that all potential discharge locations (e.g., manholes, areas where cracks may develop) in a permittee's collection system be identified in the permit application or in the permit itself.

EPA believes that the proposed prohibition provision is one way of ensuring that:

- Clear, detailed records describing the specific circumstances of an event are available for evaluating a permittee's claims to limit liability;
- Frivolous or undocumented claims to limit liability are avoided;
- Appropriate factors are demonstrated by the permittee and considered by the NPDES authority when evaluating overflows caused by exceptional circumstances;
- Claims to limit liability under the provision are made in a timely manner while the factual basis is still fresh; and
- The permittee uses feasible alternatives to prevent discharges, such as the use of auxiliary treatment facilities, retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, and an increase in the capacity of the system.

The Agency also anticipates that this proposed provision may result in additional dialogue between the permittee and NPDES authority on issues associated with performance expectations, the need for and

location of emergency overflow structures, and proper CMOM program implementation. SSO discharges caused by severe natural conditions (e.g., wet weather capacity concerns) could be excused through the proposed codification of enforcement discretion, and SSO discharges arising due to other reasons (e.g., related to accidents or emergencies) beyond the reasonable control of the operator could be excused through establishment of an affirmative defense. As noted above, neither would require pre-identification of the SSO discharge location (in a permit application or in the permit itself) because, unlike most industrial discharges, the location of most SSO discharges cannot be anticipated prior to completion of a comprehensive system evaluation. Of course, if the SSO discharge occurred through an emergency overflow structure, that conclusion may not hold. EPA invites comments on the reasonableness of not requiring pre-identification of SSO discharge locations prior to excusing such discharges from the proposed prohibition against SSO discharges.

B. What is the Basis for the Proposed Prohibition Standard Condition?

Today's proposal uses the term "prohibition" to describe how discharges from a sanitary sewer collection system that occur prior to the treatment facility would be regulated. The Agency's use of the term "prohibit" reflects its interpretation of the statute as imposing an affirmative obligation to prevent. The prohibition in today's proposal would be a technology-based limitation that is based, in part, on CWA section 301(a), which prohibits a discharge to waters of the United States except in compliance with other provisions of the CWA. Today's proposal also would clarify that discharges from a separate sanitary sewer system need to meet effluent limitations based upon secondary treatment as defined by the Administrator (see 33 U.S.C. §1311(b)(1)(B)) and any more stringent limitation necessary to meet water quality standards. EPA has defined effluent limitations based upon secondary treatment in regulations at 40 CFR Part 133. Because, as a practical matter, a discharge of municipal sewage cannot meet such limitations unless treated, sewer collection systems convey municipal sewage to a treatment facility. EPA believes that a properly designed, well-operated municipal sanitary sewer collection system should deliver sewage for treatment under all but severe natural conditions or conditions beyond the control of the system operator. For this reason, EPA believes discharges from a sanitary sewer collection system should not be authorized except from outfalls at a treatment facility. EPA recognizes, however, that some overflows are unavoidable, even at the

best run systems. Thus today's proposal contains two provisions, one codifying the use of enforcement discretion and the other providing an affirmative defense, to address such unavoidable discharges. Discharges meeting the conditions of the affirmative defense would not be considered violations of the CWA.

Under EPA policy, different technology-based pollutant control standards from the statute apply to discharges from combined sewer systems. A combined sewer system is a wastewater collection system owned by a State or municipality (as defined by section 502(4) of the CWA) that was designed to collect and convey sanitary wastewaters (domestic, commercial and industrial wastewaters) and storm water through a single-pipe system to a POTW treatment plant (as defined in 40 CFR 403.3(p)). A combined sewer overflow (CSO) is the discharge from a combined sewer system at a point prior to the POTW treatment plant. In the United States, combined sewer systems were primarily built between 1870 and 1940. Since that time governmental authorities generally have not sponsored the construction of combined sewers. Combined sewers were built with intentional inflow connections (e.g., street drainage, roof drainage) so that they could be the primary conveyance for wet weather runoff as well as for sanitary wastewaters. The design intention for combined sewer systems differs from the design intention for sanitary sewers, where intentional inflow connections are typically prohibited. As a result of this difference in design, combined sewers, which typically collect 30-40 percent³⁷ of the total volume of a rainfall event, generally have much greater volume wet weather flows than sanitary sewers, which typically collect under 5 percent of rainfall volume³⁸. Given the challenges associated with handling the large volume of wet weather flow, combined sewer systems have historically had different performance objectives during wet weather than have sanitary sewer systems. Most combined sewers were originally designed to discharge directly into surface waters. Interceptor sewers were added later (usually alongside the receiving water). Usually, the primary objective of early interceptors for combined sewers was to convey dry weather flows from the combined sewers

³⁷ EPA estimated the percentage of rainfall volume entering combined sewer systems as part of a model to estimate the costs of addressing CSOs as part of the 1996 Clean Water Needs Survey Report to Congress (CWNS), EPA, September 1997.

³⁸ Based on an evaluation of five municipal separate systems, EPA estimated that between 0.5 and 5 percent of rainfall from a storm event may enter a typical sanitary sewer system (see draft SSO Needs Report, EPA, May 2000). The percent of rainfall entering a portion of a system (e.g. a sewershed) with significant I/I problems can be higher (see draft SSO Needs Report, EPA May 2000, and Rainfall Induced Infiltration Into Sewer Systems: Report to Congress, EPA, August 1990.)

to wastewater treatment plants, and therefore they were designed to collect only two to three times the volume of dry weather flows. CSO structures were built into the system to discharge the majority of wet weather flows. Wet weather CSO discharges are not subject to secondary treatment requirements applicable to POTWs. EPA's April 19, 1994, CSO Control Policy (59 FR 18688) provides guidance on technology- and water quality-based requirements for CSOs under the NPDES program.

As described in EPA's September 8, 1989, CSO Control Strategy (54 FR 37370), which was supplemented by the 1994 Policy, EPA has taken the position that "[s]anitary sewer systems must adhere to the strict design and operational standards established to protect the integrity of the sanitary sewer system and wastewater treatment facilities. Discharges from separate sanitary sewer systems with less than secondary treatment are prohibited." (54 FR 37370, 37371.) The Agency further explained that "[f]lows to the treatment works (POTW), including dry weather and wet weather flows, are subject to secondary treatment regulations, water quality standards, and the National Municipal Policy. Dry weather discharges from CSOs, which are also subject to this [1989] strategy, are illegal and must be expeditiously eliminated. . . ." (54 FR at 37371 note 1).

EPA recognizes, however, that notwithstanding the best design and optimal operation and maintenance efforts, some discharges may yet occur that are beyond the reasonable control of the system operator. Today's proposal would recognize these exceptional circumstances and EPA has drafted the proposed "prohibition" to recognize these circumstances. As noted above, SSO discharges caused by severe natural conditions could be excused from the prohibition based on a codification of enforcement discretion (and judged according to the severity of the natural condition coincident with the discharge), while SSO discharges due to accidents and emergencies could be excused from the prohibition based on establishment of an affirmative defense (and judged according to the reasonableness of the POTW's efforts to prevent, and then subsequently to stop, and mitigate the impact of, the discharge). These components of the proposal are described more fully later.

C. Potential Alternatives to Prohibiting Sanitary Sewer Overflows -- Authorized Discharges at Less than Secondary

The purpose of the prohibition on untreated sanitary sewer overflow as proposed above is to assure that raw sewage (human excrement and other pollutants) does not go into rivers and streams. That measure is important to protect human health and the environment. EPA is

soliciting comments on an alternative approach that the Agency believes may well result in less treatment of sewage prior to discharge. The alternative approach would allow municipalities in limited circumstances, to divert some of the sewage to peak excess flow treatment facilities (at satellite locations) that may provide less than secondary treatment, before discharging to rivers and streams.

EPA is proposing the "prohibition and excuse" approach because the Agency believes that a well-designed, well-operated POTW should deliver sewage for treatment to meet limits based on secondary treatment under all but severe natural conditions or certain conditions beyond the control of the system operator. This is consistent with EPA's longstanding interpretation of Clean Water Act requirements and regulatory requirements that apply to discharges of domestic sewage from separate sanitary sewers. In addition, this approach was unanimously supported by the SSO Subcommittee, which included EPA, as reflected in today's proposal. If EPA were to change its interpretation and propose a different legal framework by which NPDES permits could "authorize" discharges from separate sewer systems under a statutory theory other than secondary treatment, such a framework would need to derive from CWA sections 301(b) and 304. Permit authorization under a statutory theory other than secondary treatment would represent a change in EPA's interpretation of the applicability of regulatory standards as well as a change from the approach supported by the SSO Subcommittee. Because sanitary sewers are designed to deliver all flows for treatment, capacity-related discharges (except those caused by severe natural conditions) are the result of inadequate planning for growth, or inattention to design, construction, operation, or maintenance of the system. Permit authorization under the approach described below could, in some cases, result in a relaxation in regulatory standards. For these reasons, EPA has serious legal concerns about whether the CWA can be interpreted to "authorize" SSO discharges with this alternative approach. Such an alternative approach would be at odds with EPA's historic interpretation, which is that the Clean Water Act is designed to assure secondary treatment of sewage from POTWs, and that all separate sewers in a municipal sanitary sewer collection system are part of the POTW. The Department of Justice expressed similar concerns during interagency review of the proposed rule.

EPA is also concerned that an approach that would "authorize" SSO discharges based on a BAT/BCT theory may allow more SSOs, or at a

minimum, result in delays in the remedial actions to address existing SSOs, particularly those related to system capacity. As discussed previously, EPA is concerned that such an approach might legitimize SSOs, which could result in more incidents of insufficiently treated sewage being discharged to the nation's waters. If a separate sewer collection system is well-designed and well-operated, discharges from such sewers should be rare.

For the above reasons, EPA also have serious concerns about whether the Clean Water Act should be interpreted to "authorize" SSO discharges under this alternative approach. Thus, EPA believes the "prohibition and excuse" framework is more appropriate than an "authorization" framework. The Agency nonetheless invites comment on the legal and practical implications if EPA were to support a BAT/BCT "authorization" alternative. EPA recognizes that any such change involves complex issues that will involve additional data collection and analysis as well as a more detailed articulation of potential approaches. Pursuing an alternative approach would therefore require additional notice and comment.

EPA interprets the CWA as requiring that permits for discharges from sanitary sewer collection systems need to include effluent limitations based on the secondary treatment regulation (40 CFR Part 133) and any more stringent limitations necessary to meet water quality standards. This interpretation considers the discharge from a sanitary sewer collection system to be a discharge from a "publicly owned treatment works" (POTW) within the meaning of section 301(b)(1)(B) of the CWA. The NPDES regulations define POTW to include "pipes, sewers, or other conveyances only if they convey wastewater to a POTW providing treatment" See 40 CFR 122.2, 125.2, 125.3(a)(1)(i). CWA section 301(b)(1)(B) requires permits for discharges from POTWs to include effluent limitations "based upon secondary treatment" as defined by EPA under CWA section 304(d)(1), or more stringent water quality-based requirements.

EPA does not interpret discharges from a POTW, within the meaning of section 301(b)(1)(B), to include discharges from CSOs. Combined sewers are sewer systems designed to convey storm water runoff (including large volumes of runoff from street curb inlets and area drains) in addition to domestic sanitary sewage and commercial and industrial wastewater. Due to this design difference, combined sewer

systems are generally subject to significantly larger increases in flow due to either rainwater or snowmelt that enters the system than are typical of sanitary sewer systems, although some sanitary sewer systems may also experience large flow increases during wet weather. During wet weather, combined systems are generally operated to convey the maximum amount of combined wastewater and storm water to the treatment works. Any excess flow is generally discharged from the system at designed overflow points before reaching the continuously operating treatment plant.

The storm-related increase in flow in combined sewer systems associated with the intentional collection of large volumes of inflow, the associated flow management challenges, and the resulting design of overflow points led to EPA's application of the BAT/BCT framework to CSOs, as well as other distinctions for combined sewer overflows in the NPDES regulations (see 133.103(a), January 27, 1989, (54 FR 4225)). This approach recognizes that during wet weather conditions, CSO overflow structures do not, nor were they designed or constructed to, convey wastewater to a POTW plant providing secondary treatment. As such, wet weather discharges from CSO discharge structures are not subject to limitations based on secondary treatment. In contrast, EPA has historically considered sanitary sewers to be conveyances that convey wastewater to a POTW providing treatment, and hence applied secondary treatment requirements.

Permits for CSO discharges need to include effluent limitations based on the application of best available technology economically achievable (BAT) for toxic pollutants and for pollutants that are neither toxic nor conventional pollutants. For conventional pollutants, the interpretation results in the application of best conventional control technology currently available (BCT). Additionally, like all discharges, if necessary, permits authorizing discharges from CSO structures need to include any more stringent water quality-based requirements if necessary to meet water quality standards. EPA's interpretation of the applicable technology-based standards for wet weather CSO discharges was upheld in *Montgomery Environmental Coalition v. Costle*, 646 F. 2d 568 (DC Cir. 1980). Consistent with the Agency's CSO policies and strategies, the BAT/BCT requirements are applied on a best professional judgment (BPJ) basis within the framework described in those policies and strategies. The factors used for applying the BAT and BCT technology-based standards are described in 40 CFR 125.3. This

approach provides regulatory flexibility for establishing requirements for CSOs and allows addressing CSO discharges in the context of comprehensive controls addressing the collection system.

EPA provided guidance on the planning, selection and implementation of CSO controls in the National CSO Control Strategy (September 8, 1989 (54 FR 37370)) and the CSO Control Policy (April 19, 1994 (59 FR 18688)). These documents describe provisions for developing appropriate requirements for several categories of CSOs. The National CSO Control Strategy and CSO Control Policy provide that permits are to prohibit CSOs that occur during dry weather. Such a discharge would be considered a discharge from a POTW because combined sewer systems were designed and constructed to deliver flows to a POTW plant for treatment during dry weather. The National CSO Control Strategy also clarifies that discharges from locations or points within a combined sewer system that are not permitted are prohibited. This would include discharges from locations within a combined sewer system other than designed overflow points (e.g. line breaks, backups through manholes or catch basins). The 1994 CSO Control Policy provides comprehensive guidance for developing site-specific NPDES permit requirements for combined sewer systems to address wet weather CSO discharges from designed overflow points. Under the CSO Control Policy, permittees with combined sewer systems that have CSOs are to immediately undertake a process to accurately characterize their sewer systems, to demonstrate implementation of nine minimum controls identified in the Policy and to develop and implement a long-term CSO control plan that will ultimately result in the compliance with the requirements of the CWA.

Under an alternative that would incorporate a BAT/BCT approach to discharges from separate sanitary collection systems, EPA would need to change its current interpretation of the term POTW, specifically, the interpretation of "conveyances only if they convey wastewater to a POTW providing treatment." While changing to the BAT/BCT standard might allow NPDES authorities to authorize discharges from PEFTFs serving sanitary sewer collection systems through permits at a treatment level less than secondary treatment, EPA is concerned that such an "authorization" could legitimize less than secondary treatment of SSO discharges that, although prohibited under applicable standards, are currently occurring.

Under this alternative, effluent limitations in permits for discharges from PEFTFs would need to include effluent limitations based on BAT/BCT and any more stringent limitations necessary to meet water quality standards. While the requirements for such discharges would not be

based on secondary treatment, the approach might reduce some risks presented by SSO discharges by reducing uncontrolled wet weather overflows and ensuring some non-biological treatment (e.g., suspended solids removal, disinfection) for the controlled, wet weather overflows that remained. This alternative, however, which would not require all domestic sewage flows in a separate system to be delivered for treatment at the secondary treatment plant, would weaken currently applicable standards. EPA requests comment on the relative health and environmental benefits associated with applying the secondary treatment regulations at 40 CFR Part 133 or the application of a BAT/BCT framework to intermittent, peak flow discharges from sanitary sewer collection systems. Comments on such alternatives should be mindful of the need to assure that SSO discharges (authorized under either a secondary treatment or BAT/BCT framework) remain subject to the water quality-based requirements of the Act.

If EPA were to apply the BAT/BCT approach to SSO discharges, the Agency would still promulgate standard permit conditions that were similar to the CMOM program, prohibition, and reporting, record keeping and public notification standard permit conditions proposed in today's notice. The CMOM program standard permit condition would not be explicitly modelled on the nine minimum controls and long-term control plan of the CSO Control Policy, but rather would be based on the framework proposed in today's notice. These standard permit conditions could provide a framework for permitting authorities to determine the technology-based and water quality-based requirements needed to comply with the CWA. As a result, they would provide a parallel planning framework to the nine minimum controls and long-term control plan described in the 1994 CSO Control Policy. Many of the principles of the CMOM standard permit condition proposed in today's notice are consistent with the principles identified for the nine minimum controls and long-term control plans called for in the CSO Control Policy. The planning and operating requirements of the CSO Control Policy (i.e., the nine-minimum controls and long-term control plan) and the planning and operating requirements proposed for SSOs in today's notice (i.e., CMOM program requirements), are similar in that they provide flexible frameworks for the consideration of system-specific factors and the selection and implementation of specific measures that may ultimately provide for compliance with the CWA. EPA believes that most aspects of the nine minimum controls and long-term control plan generally should be reflected in a CMOM program. The Agency notes that specific measures that would be identified by a permittee and the manner in which they are

implemented can vary significantly between combined sewers and sanitary sewers, depending on system specific factors.

EPA requests comments on this approach and on how the standard permit conditions for CMOM programs and the prohibition on SSO discharges that are proposed in today's notice would need to be modified if the Agency were to adopt such an approach. The Agency also requests comments on how the factors associated with the BAT and BCT standards should be used to identify measures necessary to come into compliance with various parts of the CMOM program standard permit condition, such as the determination of adequate system capacity (i.e., capacity for delivery of flows for treatment prior to discharge).

If a BAT/BCT approach were adopted, a modification to the CMOM requirements proposed in this notice would be necessary to address the possibility that a permittee's system evaluation and capacity assurance plan and program audit indicates that the use of a PEFTF to reduce adverse health or environmental impacts may be appropriate. Since a BAT/BCT framework would provide more flexibility for authorizing discharges from PEFTFs under an NPDES permit, the Agency believes that if this approach were adopted, it would be necessary to build a comprehensive process for analyzing the need of a PEFTF into the CMOM provision. EPA requests comment on what information should be considered in such a comprehensive process and how it should be incorporated into the CMOM approach.

An additional consideration associated with this approach is the costs of addressing SSOs and the framework for considering those costs. As noted in the draft *SSO Needs Report* and also in Table 8 in Section I.K. of this notice, the incremental costs of controlling SSOs caused by wet weather increase significantly as the control objective for frequency of overflows is decreased. In addition, as noted in the draft *SSO Needs Report* and section I.K of today's preamble, some municipalities facing some of the most significant I/I problems in their collection system, may significantly reduce costs by incorporating a limited number of treated discharges into a comprehensive control strategy that may also include expanding collection system and/or treatment plant capacity, and reducing peak flows. The Agency requests comments on the consideration of these costs under an approach based on a system-wide application of BAT/BCT and more stringent water quality-

based requirements as well as under the secondary treatment framework proposed in today's notice.

A BAT/BCT approach would alter the framework for issuing permits for discharges from PEFTFs. Rather than require permits for discharges from PEFTFs to include effluent limitations based on the secondary treatment regulations at 40 CFR Part 133, a BAT/BCT framework also might be useful to identify a system-wide comprehensive set of measures to manage peak flow (e.g., removal of sources of peak flow, improved conveyance capacity, improved treatment plant capacity, and additional storage or equalization), establish management, operation and maintenance requirements for the collection system and, if still necessary, establish treatment requirements for discharges. If EPA pursued a BAT/BCT approach, the Agency could develop criteria and procedural guidelines to ensure a closely circumscribed framework that would only authorize discharges from a PEFTF as part of a comprehensive control strategy. The guidelines would describe, for example:

- A screening process and criteria that would be evaluated by the NPDES authority prior to permit issuance; and
- Criteria for permit conditions for peak excess flow treatment facilities.

Screening Process

If the final rule was premised on a theory to "authorize" PEFTF discharges through permits, the NPDES authority would conduct a screening process prior to permit issuance to determine whether discharges from a PEFTF could be authorized in the permit in the first instance. The screening process would support the determination of whether issuing a permit to conditionally authorize discharges from the peak excess flow treatment facility is appropriate or not. If the Director determined that a permit for discharges from the facility could be issued at all, the application information and screening criteria would support the development of appropriate permit conditions.

The permit applicant would provide the information to be used in this process in a permit application (Form 2A) and a companion engineering report that, at a minimum, contains the information described below. Where the applicant could not demonstrate all applicable criteria would be met, a permit for discharges from a peak

excess flow treatment facility could only be issued in conjunction with an enforcement order that provides a compliance schedule.

Form 2A requires the submittal of specific facility, process and effluent information and data and other specified information. The companion engineering report would include an assessment of peak flows in the collection system including a description of the results of work to characterize and project peak flows; the source of extraneous flows contributing to peak flows, including estimates of the percentage of inflow and rainfall induced infiltration that comes from portions of the collection system other than the portions that are owned by the permittee; and continuous planned evaluation activities.

The applicant would identify cost-effective alternatives in the companion engineering report. The description of alternatives would include a detailed assessment of the current physical condition of the portion of the collection system that will contribute flows to the proposed peak excess flow treatment facility; and an identification and evaluation of a comprehensive set of reasonable alternatives to the excess flow treatment facility. The engineering report would, at a minimum, include a demonstration that increased storage of untreated wastewater during peak flow conditions, additional reduction of inflow and infiltration, increased capacity of the system, or other alternatives specified by the Director are not practical and not cost-effective. EPA requests comments on other criteria for evaluating alternatives (e.g., measures are not feasible, remaining I/I is not excessive).

As part of the demonstration, the identification of alternatives would need to include consideration of: 1) additional I/I removal; 2) increased storage and/or flow equalization of peak flows; 3) increased capacity of the collection system and/or continuously operating treatment facility. At least one alternative that would need to be considered would be additional measures to reduce extraneous flows from portions of the collection system that are not owned by the permittee. The permit applicant would provide estimates of performance ranges of the different control techniques considered, as well as a description of the technical limitations of control techniques. The alternatives description would need to include estimates of the percentage of inflow and rainfall induced infiltration that comes from portions of the collection system other than those portions owned and operated by the

permittee; and a description of the steps that have been taken to reduce inflow and rainfall induced infiltration and options for additional controls of these sources.

The description of alternatives would need to include a detailed cost estimates of alternatives and a summary of the overall costs of the sewer system assessment effort, measures to reduce I/I and measures to convey (including temporary storage) and treat flows at a continuously operating plant that provides biological treatment. The evaluation of costs would specify the planning period used in the analysis, which can be based on considerations of the design life of the facility, the duration of bonds or other financial instruments expected to finance the project and the 5-year permit period. The analysis would need to project the economic impacts of alternatives, including impacts on user fees.

The cost effectiveness analysis curves described in section 4.6 of "Sewer System Infrastructure Analysis and Rehabilitation", EPA, 1991, includes a cost/flow curve that identifies the optimal point for sewer rehabilitation. The cost curve provides estimates of the total cost needed for corrective actions. The engineering report would include the supporting cost and flow curves used to develop the cost/flow curve with the optimal point for sewer rehabilitation; and cost/performance curves to demonstrate the relationships between various discharge frequencies. This should include an analysis to determine where the increment of pollution reduction achieved diminishes compared to the increase costs.

The applicant would need to provide a description of the management, operational, and maintenance program for the collection system as well as a summary of major remediation projects that have been completed, including a description of the effectiveness of remediation measures. This description would also describe how the delivery of flows during peak flow conditions would be maximized to a continuously operating POTW treatment plant(s) that serves the collection system.

The applicant would need to demonstrate that the proposed treatment facility would be able to provide credible treatment under a wide range of operating conditions, including variable influent concentrations. The demonstration would include a description of the location of proposed discharges from the treatment facility; the

treatment process to be used, included projected performance data and a description of operational requirements; available or projected information regarding effluent quality and frequency of discharge; descriptions of the technical limitations of the proposed treatment facility; and estimates of the effectiveness of treatment by the existing biological unit at the existing treatment facility (or as modified by proposed alternatives) under peak flow conditions relative to the effectiveness of the proposed treatment of in-system discharges. EPA requests comment on whether it should evaluate the appropriateness of providing guidance on minimum treatment requirements, and if so what minimum treatment requirements for PEFTFs should be (e.g. high-efficiency sedimentation, primary treatment, etc.).

The engineering report would also include a risk assessment where applicants would identify downstream uses which may potentially be impaired by the discharge as well as the major risks associated with other alternatives. The applicant would specifically identify any sensitive waters that would be downstream of the proposed peak excess flow treatment facility. Sensitive waters are to be identified by the NPDES authority in coordination with Federal, State and local agencies. Minimum criteria for sensitive waters could be provided. Examples of sensitive waters could include public drinking water intakes and their designated protection areas, swimming beaches and waters where swimming occurs, shellfish beds, designated Outstanding National Resource Waters, National Marine Sanctuaries, waters with federal, state and local parks, and waters containing threatened or endangered species and their habitat. Except where such action would provide less protection of human health or the environment, peak excess flow treatment facilities that discharge to sensitive waters should be prohibited, eliminated or moved wherever physical possible and economically achievable. Where a prohibition, elimination, or relocation is not physically possible or economically achievable, or would provide less protection to human health. Treatment requirements would be consistent with attainment of designated uses of receiving waters.

As part of the engineering report, the applicant would have to show that the affected public has been provided an opportunity to actively participate in the decision-making process, including review and comment on alternatives. The affected public includes persons who reside downstream from the proposed treatment facility, persons who use and enjoy these downstream waters, rate payers, and any other

interested persons. The applicant would provide a summary of major concerns raised by the public, describe the extent of support for the proposed facility, and how the concerns have or have not been addressed.

Permit Criteria

Under this approach, a permit for discharges from a peak excess flow treatment facility would have to, at a minimum provide for:

- 1) **Conditions defining when discharge may occur** - Permits would restrict the conditions under which discharges may occur. This can be done in a number of ways, including specifically prohibited discharges where the flows in the sewer system are less than a specified threshold flowrate (which would be based on the capacity of the collection system) and/or limiting the frequency of discharge.
- 2) **Technology-Based Effluent Limitations** - Permits would be required to provide appropriate technology-based effluent limitations.
- 3) **Water Quality-Based Effluent Limitations** - Permits would require any more stringent water quality-based effluent limitations (WQBELs) necessary to achieve water quality standards.
- 4) **Continuing Impacts Evaluation** - Permits would require the permittee to implement a post-construction human health and water quality assessment program including requirements to monitor and collect sufficient information to demonstrate compliance with water quality standards and protection of designated uses.
- 5) **Continuing Alternatives Evaluation** - Permits would require the permittee to continue to evaluate if, based on current conditions, increased storage of untreated wastewater during peak flow conditions, additional reduction of inflow and infiltration, increased capacity of the system, or other alternatives are not practical and not cost-effective. The continuing assessment should evaluate progress made in rehabilitating the collection system, new or improved techniques to minimize overflows or changing circumstances that influence cost effectiveness.
- 6) **Monitoring and Reporting** - Monitoring and reporting requirements would be established on a case-by-case consistent with 40 CFR 122.44(i).
- 7) **Reopener** - The permit most likely would contain a reopener clause that authorizes the NPDES authority to reopen and

modify the permit upon determining that the treatment facility fails to meet water quality standards or protect designated uses.

The Director would have to evaluate the criteria listed above when reissuing a subsequent permit in light of changing circumstances, progress made in rehabilitating the collection system, and planning criteria such as the duration of financial instruments used to finance the project.

EPA requests comment on other alternatives to the "prohibition and excuse" framework proposed today, such as approval of CMOM programs or defining *de minimis* thresholds for SSO discharges, and how such alternatives would appropriately protect human health and the environment.

D. How Does the Proposed Standard Condition Address Discharges Caused by Severe Natural Conditions?

The proposed provision would clarify that the Director may take enforcement action against the permittee for a prohibited municipal sanitary sewer system discharge to waters of the United States caused by natural conditions unless the permittee demonstrates through properly signed, contemporaneous operating logs, or other relevant evidence that:

- \$ The discharge was caused by severe natural conditions (such as hurricanes, tornados, widespread flooding, earthquakes, tsunamis, and other similar natural conditions);
- \$ There were no feasible alternatives to the discharge, such as the use of auxiliary treatment facilities, retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, or an increase in the capacity of the system; and
- \$ The permittee submitted a claim to the NPDES authority within 10 days of the date of the discharge that the discharge meets the criteria of the permit prohibition provision.

The proposed prohibition would clarify that all sanitary sewer system discharges to waters of the U.S. are prohibited, but specifies that in very limited circumstances, NPDES authorities would not bring an enforcement action for a specific discharge.

The Agency requests comment on the general approach of addressing discharges caused by severe natural conditions by codifying criteria for enforcement discretion as well as alternative approaches such as using the proposed criteria to establish a framework for an affirmative

defense. The manner in which an affirmative defense provision could be used, including limitations on its use, is discussed below.

1. What Criteria Should Be Used When Evaluating Discharges Caused by Severe Natural Conditions?

Today's proposed rule provides three general criteria in a closely circumscribed framework for evaluating the specific circumstances of a discharge caused by severe natural conditions. The Agency believes that general criteria are appropriate to maintain enforcement discretion and the ability of the NPDES permitting and enforcement authorities to establish remedies on a case-by-case basis.

The proposed "no feasible alternatives" criterion is intended to promote improvement in a manner that is consistent with and retains enforcement discretion. The Agency believes that the feasible alternatives standard allows for consideration of changing conditions, and promotes the necessary investment where discharges caused by severe natural conditions may occur. The proposed prohibition is not intended to be a static design or performance standard or criterion.

The proposed CMOM provision would clarify that the NPDES authority would consider the quality of the CMOM program, its implementation, and effectiveness in relevant enforcement actions. EPA intends that the proposed requirement for system evaluation and capacity assurance plans that is part of the CMOM standard permit condition would provide a framework for permittees with peak flow conditions that contribute to an SSO discharge to identify, evaluate, and implement feasible alternatives (see section III.I.4.) The Agency requests comments on whether and how the feasibility criterion should be applied, including whether it should be applied in addition to the "severe natural conditions" criterion.

The proposed standard condition provides several examples of severe natural conditions to clarify that claims should be limited to extreme conditions. The examples listed are not intended to reflect design or performance standards or criteria, but rather are common-sense examples of severe natural conditions. The Agency requests comments on whether these examples clarify the term "severe natural conditions," whether they generally represent technically feasible levels of control, whether they represent a reasonable range of examples relative to the performance of sanitary sewer collection systems, and whether they should be coupled with the "no feasible alternatives" criterion or stand independently.

2. How Would the Proposed Standard Condition Address Discharges Caused by Severe Natural Conditions that Cause or Contribute to Non-Attainment of a Water Quality Standard?

Under today's proposed rule, the same three general criteria (i.e., severe natural conditions, no feasible alternatives, compliance with notification requirements) would be used to evaluate the specific circumstances of a discharge caused by severe natural conditions even if the discharge caused or contributed to an exceedance of a water quality standard.

E. How Would the Proposed Standard Condition Address Discharges Caused by Factors Other Than Severe Natural Conditions?

The proposed standard condition would also provide a defense for discharges caused by factors other than severe natural conditions. Under the proposed prohibition standard permit condition, a permittee could establish an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the permittee demonstrates through properly signed, contemporaneous operating logs or other relevant evidence that:

- \$ The permittee identified the cause of the discharge event;
- \$ The discharge was exceptional, unintentional, temporary and caused by factors beyond the reasonable control of the permittee;
- \$ The discharge could not have been prevented by the exercise of reasonable control, such as proper management, operation and maintenance; adequate treatment facilities or collection system facilities or components (e.g., adequately enlarging treatment or collection facilities to accommodate growth or adequately controlling and preventing I/I; preventive maintenance; or installation of adequate backup equipment);
- \$ The permittee submitted a claim to the NPDES authority within 10 days of the date of the discharge that the discharge met the conditions of this provision; and
- \$ The permittee took all reasonable steps to stop, and mitigate the impact of, the discharge as soon as possible.

The proposed framework for raising an affirmative defense is similar to the existing upset standard permit condition at 40 CFR 122.41(n) except that the proposed prohibition has been adapted to specifically address discharges that are not caused by severe natural conditions. One focus of this approach is that in order to raise an affirmative defense, a discharge must arise from factors beyond the reasonable control of the permittee. The proposed language explains that reasonable controls are generally viewed as adequate measures. Where possible, permittees wishing to raise an affirmative defense should use generally accepted industry or State practices and guidance as guidelines for demonstrating that they had instituted reasonable controls (or adequate measures). The Agency requests comment on what

factors should be considered in demonstrating "beyond the reasonable control" of the permittee or "adequate measures" and whether and how the proposed prohibition should be clarified. However, as discussed in section III.H, the Agency does not believe that it should develop national minimum levels for reasonable control or adequate measures.

The Agency requests comment on whether the term "unintentional" should be retained in this provision. In general, the term "unintentional" is not intended to preclude a permittee from raising an affirmative defense for a discharge from an emergency overflow structure that arises from an unforeseen event such as a blockage. A claim of an affirmative defense for such an event would be considered in light of the proposed criteria in the provision. The Agency believes that intentional discharges would rarely be considered beyond the reasonable control of the permittee. The Agency requests comment on specific situations where a permittee may claim an affirmative defense for an intentional action.

EPA is proposing today's prohibition standard condition as a technology-based limitation. The proposed language would clarify that the affirmative defense for discharges caused by factors other than severe natural conditions would be limited to noncompliance with technology-based permit effluent limitations. This approach is consistent with the existing upset provision at 40 CFR 122.41(n). The existing upset provision recognizes that no pollution control technology works perfectly all the time, and that EPA sets technology-based standards without lowering the standard to accommodate occasional failures of control technologies. Under the proposal, an affirmative defense could not be raised for noncompliance with a water quality-based effluent limitation, such as a general prohibition on discharges causing or contributing to an excursion from a water quality standard. EPA notes that this type of water quality-based general prohibition has been included in many NPDES permits, particularly permits issued by authorized States (which are both an NPDES permitting authority and a water quality standards authority). EPA believes the Act does not require the Agency to establish an affirmative defense for water quality-based permit limitations (see Natural Resources Defense Council v. EPA, 859 F.2d 156 (D.C. Cir. 1988)). Rather, the Agency believes it is more appropriate to address noncompliance of water quality-based permit limitations using case-by-case prosecutorial discretion.

The Agency requests comment on the general approach of using an affirmative defense to address discharges caused by factors other than severe natural conditions as well as alternative approaches such as codifying criteria for enforcement discretion.

F. What Is the Proposed Timing for Notifying the NPDES Authority?

EPA is proposing that, where the permittee wants to raise a claim that a specific sanitary sewer discharge meets the limited criteria of the proposed prohibition, the permittee would need to notify the NPDES authority within ten days of the date of the discharge. The proposed ten-day deadline is intended to ensure that claims under this provision would be submitted while information about the event is still fresh and would prevent a permittee from raising claims after the NPDES authority could respond with a timely investigation. The Agency requests comment on this proposed time period.

EPA is aware that in some cases a permittee raising a claim under the prohibition might be in the position of submitting this ten-day notification even in cases where the discharge itself did not warrant noncompliance reporting through 24-hour or 5-day reports B i.e., where the discharge was not likely to imminently and substantially endanger human health. The Agency seeks comment on ways to provide more consistency between the two types of reporting, particularly the criteria that trigger each type of report.

V. PROPOSED PERMIT REQUIREMENTS FOR MUNICIPAL SATELLITE COLLECTION SYSTEMS

A. What are Municipal Satellite Collection Systems?

Many municipal sanitary sewer collection systems are not entirely owned or operated by a single municipal entity. A municipal entity that operates a treatment plant may be responsible for conveying and/or treating wastewater from sewers of other municipalities. The term "municipal satellite collection system" refers to a collection system that is owned or operated by a municipality other than the municipality that provides treatment for wastewater added throughout the system. The term "regional collection system operator" refers to a collection system operator who is responsible for the treatment plant(s) that receives wastewater from municipal satellite collection systems. Regional municipal collection system operators who provide wastewater treatment may only operate a relatively small portion of the collection system, such as major interceptors or collector sewers in certain areas.

B. How Many Municipal Satellite Collection Systems Are There?

For the purpose of this rulemaking, EPA estimates that there are about 4,800 municipal satellite collection systems in the United States, based on the 1996 Needs Survey.³⁹ At this time, EPA is unable to estimate the size distribution of these systems. The Agency believes that most municipal satellite collection systems are small, although the Agency is aware that some large municipal collection systems are satellite systems, particularly where municipal authorities (e.g., wastewater districts) have been formed solely to assume wastewater responsibilities. EPA believes that most municipal satellite collection systems that are composed of sanitary sewers currently do not have NPDES permit coverage. The Agency believes that most municipal satellite collection systems composed of combined sewers currently do have NPDES permit coverage, but recognizes that some currently do not. EPA requests comments on the number of municipal satellite collection systems in the United States, and estimates of their size distribution. Such estimates are important in determining the national impact of today's proposed rule.

C. Why Would EPA Expand NPDES Permit Coverage to Municipal Satellite Collection Systems?

³⁹To develop this estimate, the Agency subtracted the estimated number of municipalities that are NPDES permittees from the estimated total number of municipalities identified in the Clean Water Needs Survey as having wastewater responsibilities.

EPA believes it is important to ensure that the NPDES program effectively addresses municipal satellite collection systems. Municipal satellite collection systems can make up a significant percentage of the total sewer length in a municipal collection system. In some cases, the regional sewerage authority or district that is responsible for operating the treatment plants of a sewerage system, and which is the traditional NPDES permit holder, may only own or operate a limited segment of the collection system, such as the main interceptors. In extreme cases, the regional authority or district (and traditional NPDES permit holder) does not own or operate any part of the collection system, only the treatment plant.

The Agency believes that poorly performing municipal satellite collection systems can be major contributors to peak flow problems in regional collection systems. In addition, the Agency believes that the investment in maintenance, repair and enhanced capacity of municipal satellite collection systems has often historically lagged behind that for regional municipal collection systems. This lag in investment is generally due to institutional issues such as lack of responsibility by municipal satellite collection system operators for problems downstream in the collection system or at a treatment plant, even where the municipal satellite collection system may have been a significant source of capacity problems downstream. In addition, direct oversight by EPA and NPDES States has been limited.⁴⁰

Municipal satellite collection systems can also experience overflows. The Agency believes it is important to clarify who is required to report these events to the NPDES authority and how they should be reported, in order to protect human health and the environment. The objective of today's proposal is to ensure that requirements are clear for: reporting discharges to the NPDES authority; notifying the public, health authorities, and other affected entities; and responding to overflow events.

Today's proposed rule recognizes the complex institutional challenges that underlie management of municipal collection systems. EPA believes that while most regional collection system operators have entered into service agreements with operators of their municipal satellite collection systems, existing service agreements in most cases do not address peak flow conditions or set specific requirements for managing, operating, and maintaining the municipal satellite collection

⁴⁰ A 1997 ASIWPCA survey in which 34 States responded indicated that 2 States issued NPDES permits for all municipal satellite collection systems within the State, 5 States issued NPDES permits to some, and 26 States do not issue permits to these systems. Of the 26 States that do not issue NPDES permits for these systems, 17 establish alternative State measures; 10 provide for local regulation, and 4 States used alternative means. Two States indicated that municipal satellite collection systems are not regulated at all.

systems. Several municipal representatives participating on the SSO Subcommittee indicated that existing State law may limit the ability of some regional collection system operators to use service agreements to require municipal satellite collection system operators to maintain their portion of the collection system, report SSOs occurring in the satellite system to the regional system, or limit wastewater flows into the regional system. Other representatives indicated that political factors may impede efforts to ensure proper operation and maintenance within municipal satellite collection systems.

D. How Would Municipal Satellite Collection Systems be Regulated Under Today's Proposed Rule?

EPA is proposing to clarify the framework for regulating municipal satellite collection systems under the NPDES permit program. The clarification would result in application of the standard permit conditions in today's proposed rule (e.g., reporting, public notification, and recordkeeping; capacity, management, operation and maintenance requirements; and prohibition) along with other standard permit conditions throughout municipal collection systems including satellite portions. Under the proposal, permit conditions could apply to municipal satellite collection systems in one of two ways:

- (1) The owner (or operator) of the municipal satellite collection system would need to obtain NPDES permit coverage and would be directly responsible for implementing permit requirements; or
- (2) Where sufficient arrangements have been made and are supported by service agreements or other similar mechanisms, the NPDES permit for the regional collection system would hold the operator of the regional collection system responsible for implementation of permit conditions in the municipal satellite collection system.

EPA expects that most owners or operators of municipal satellite collection systems would need to obtain NPDES permit coverage that would hold them directly responsible for implementing permit requirements for the portions of the collection system for which they have operational control. Today's proposal, however, would allow the owner or operator of a regional collection system to work with its satellite collection systems and propose to the NPDES authority that it assume responsibility for implementing permit conditions in designated municipal satellite collection systems. Regional systems already may have the equipment, expertise, and trained staff for implementing CMOM programs for their own collection systems, so expansion to satellite systems may be more cost-effective from the satellite's perspective. In this situation, the NPDES permit would clarify which party is responsible for implementing permit conditions in each municipal satellite collection system.

EPA is also proposing that, where a municipal satellite collection system does not have permit coverage and experiences an SSO that discharges to waters of the U.S., the owner or operator of the municipal satellite collection system would need to submit a permit application within 180 days of the discharge. This provision would complement the proposed permit reporting requirements to ensure that SSOs from a municipal satellite collection system that result in a discharge to waters of the U.S. are reported to the NPDES authority. The 180-day application requirement, however, would not relieve the discharger from liability for the unauthorized discharge.

The NPDES authority would have discretion to decide whether to issue NPDES permits as individual permits or general permits or whether co-permittees are appropriate for a given collection system.

1. Regional Implementation of Measures in Municipal Satellite Collection Systems

Today's proposal provides some flexibility in clarifying the responsibilities for implementing permit requirements, such as CMOM program requirements and reporting, public notification and recordkeeping, within service areas of municipal satellite collection systems. Where a regional collection system operator makes the necessary arrangements with a municipal satellite collection system to conduct the required activities in the satellite system, the NPDES authority could include conditions in the regional system's permit to specify the regional system's obligations within the satellite system. In this situation, the owner/operator of the satellite system would not have to be an NPDES permittee. This arrangement, however, would not remove the liability for discharges from a satellite system, from the owner/operator of the satellite system who would retain liability for discharges from its system to waters of the U.S.

The Agency recognizes that some regional collection systems do not have sufficient legal authority or jurisdiction over the satellite collection systems that send it flow to ensure the satellite collection system fully implements an adequate CMOM program. Therefore, today's proposal is not intended to mandate that regional collection systems must implement CMOM activities in municipal satellite collection systems where the regional system does not have sufficient authority. Rather, regional collection systems should only be assigned such responsibilities where the regional collection systems has sufficient legal authority to implement such an approach. The Agency requests comments on when this flexibility is appropriate and the legal and institutional barriers associated with holding regional collection systems responsible for municipal satellite collection systems.

2. Scope of Coverage

The intent of today's proposed rule is to ensure that the responsibility under the NPDES program to report sanitary sewer overflows, provide public notification, provide adequate capacity, and properly operate and maintain municipal satellite collection systems is clear. While the Agency recognizes that not all municipal satellite collection systems have discharges, or have I/I that creates capacity problems for regional collection systems, the Agency believes that all municipal satellite collection systems should be subject to a comprehensive regulatory framework under the NPDES program, regardless of the performance of their collection systems and the existence of alternative State requirements. The Agency believes this is the most comprehensive approach, would tend to level the playing field, and would ensure the basis for Federal enforcement if necessary. The Agency requests comment on whether the framework for requiring NPDES permit coverage for municipal satellite collection systems should provide criteria for targeting specific municipalities (e.g. only targeted municipal satellite collection systems would need NPDES coverage), and if so, what targeting mechanism should be used (e.g., occurrence of overflow events, whether or not they resulted in a discharge to waters of the U.S., problems identified by the regional collection system, service population/size threshold).

Today's proposal regarding municipal satellite collection systems would expand NPDES coverage for collection systems composed of either sanitary sewers or combined sewers, or a combination of both types of sewers. The Agency requests comments on whether the provision should apply to both municipal satellite collection systems composed of combined sewers and municipal satellite collection systems composed of separate sanitary sewers (as well as systems composed of both sanitary and combined sewers).

Today's proposal defines municipal satellite collection systems in terms of systems that convey wastewater to a POTW treatment facility that has an NPDES permit or is required to apply for a permit under 40 CFR 122.21(a). The Agency notes that many "no discharge" POTWs currently do not have NPDES permits. This group of facilities may include biological treatment facilities that apply treated wastewater to land rather than discharge to a receiving water, publicly owned community septic systems, and other types of publicly owned decentralized facilities. "No discharge" facilities tend to be smaller systems, although some large facilities are no discharge facilities. NPDES authorities have issued permits to some "no discharge" POTWs for a variety of reasons, including clarifying the regulatory framework for periodic, unplanned discharges (e.g., upset and bypass). "No discharge"

NPDES permits would be especially appropriate to address SSOs from collection systems that are part of "no discharge" POTWs and to establish CMOM program requirements. Some such POTWs already have NPDES permits, but only to address the beneficial use and disposal of biosolids (sewage sludge). EPA requests comments on this aspect of the proposal, specifically, whether (and how) to ensure NPDES permit coverage for municipal satellite collection systems that convey wastewater to a "no discharge" POTW treatment facility.

EPA is also proposing to define municipal satellite collection systems as a municipal collection system that conveys wastewater to a publicly owned treatment works. EPA requests comments on whether this provision should be expanded to address municipal satellite collection systems that convey wastewater to privately owned treatment works.

E. What is the Legal Authority for These Proposed Requirements?

Legal authority for the proposed requirements for municipal satellite collection systems derives from the definition of "publicly owned treatment works." CWA section 212(2)(A) defines "treatment works" to include "any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature . . . including . . . intercepting sewers, outfall sewers, sewage collection systems" EPA regulations define the term "publicly owned treatment works" similarly at 40 CFR 122.2 and 403.1. To date, EPA and authorized States have issued NPDES permits to entities that operate POTW treatment plants, specifically, because such plants discharge directly to waters of the U.S. and/or because they generate sewage sludge. In developing today's proposal, which is intended to clarify EPA expectations about proper management, operation and maintenance (among other things), the Agency recognized that capacity, management, operation and maintenance are system-wide concerns and are not always within the control or authority of the POTW treatment plant operator. Today's proposal would ensure that these necessary system-wide controls would be implemented throughout the entire "POTW" as defined to include the POTW treatment plant and the collection system. It would provide the NPDES authority with flexibility in determining who will be subject to the NPDES permit requirement to implement CMOM in the satellite collection system.

F. What Are the Proposed Permit Application Requirements for Municipal Satellite Collection Systems?

If the owner/operator of a municipal satellite collection system needed to obtain NPDES permit coverage, he or she would either submit an individual permit application or obtain coverage under a general permit.

The requirements for individual permit applications for POTWs are established at 40 CFR 122.21(j) and would be used for today's proposal unless the POTW was covered by a general permit (see 40 CFR 122.28). These requirements are incorporated into Form 2A, which is the application form EPA uses for POTWs. EPA modified POTW application requirements and Form 2A on August 4, 1999 (64 FR 42434). Authorized NPDES States typically use their own individual permit application forms, but the State form must at least require the information required under the regulation at 40 CFR 122.21(j).

Today, EPA is proposing that application requirements for municipal satellite collection systems would be the information required under 122.21(j) (i.e., information required in Form 2A) except for the following regulatory provisions: (1)(viii)(B), (1)(viii)(C), (1)(viii)(E), (2)(ii), (2)(iii), (3)(iii), (4), (5), (6) and (7). In terms of the numbering system used on Form 2A, the applicant would not have to submit the following information required in Form 2A: A.8.b, A.8.c, A.8.e, B.2.(a)-(f), B.3, A.11(a)-(c), A.12, B.6, D, E.(1)-(4), F(2)-(8), F(9)-(15), but would have to submit the rest of the information on the form. In essence, the Agency is proposing to use the Form 2A permit application requirements for municipal satellite collection system except for provisions that apply only to treatment plants. EPA requests comments on whether these are adequate and appropriate application requirements for municipal satellite collection systems.

Application or notice of intent requirements for general permit coverage would be established by the general permit.

G. What Would Be the Deadlines for Submitting Permit Applications?

EPA is proposing the following deadlines for the owner or operator of a municipal satellite collection system to submit a permit application where required:

- \$ If on [date 2 years from date of publication of the final rule], a permit application for the regional collection system that receives flows from the municipal satellite collection system has been submitted to the NPDES authority and is currently pending (i.e., the permit for the regional system has not been reissued), the owner or operator of the municipal satellite collection system must submit a permit application by [date 3 years from date of publication of the final rule];
- \$ If on [date 2 years from date of publication of the final rule], a permit application for the regional collection system that receives flows from a municipal satellite collection system is not

pending, the owner or operator of the municipal satellite collection system must submit a permit application by the date that the treatment facility is required to submit the permit renewal application;

\$ Where a municipal satellite collection system that does not have permit coverage experiences a sanitary sewer overflow that discharges to waters of the U.S., the owner or operator of the satellite system must submit a permit application within 180 days of the discharge; and

\$ Where the Director requires the owner or operator of the municipal satellite collection system to submit a permit application on a case-by-case basis, the owner or operator of the satellite system must submit a permit application within 180 days of notification by the Director, unless the Director establishes an alternative deadline.

EPA seeks comment on these deadlines.

Note that the permit application deadline would not relieve the municipal satellite collection system of liability for an unpermitted discharge.

H. What Types of Permit Conditions Would Be in Permits for Municipal Satellite Collection Systems?

As discussed above, municipal satellite collection systems may comprise either sanitary sewers or combined sewers (or a combination of both types of sewers). The NPDES permit requirements for these different types of collection systems would be different because of the different standards and regulatory frameworks imposed.

At a minimum, NPDES permits for municipal satellite collection systems would contain the standard permit conditions for reporting, recordkeeping, public notification, and CMOM programs and the prohibition on SSO discharges and other standard conditions provided in the NPDES regulations. As indicated in the proposed prohibition language, the bypass and upset provisions at 40 CFR 122.41(m) and (n), respectively, would be retained in the permit but would only apply to discharges from a treatment plant and not to SSOs. If a satellite system had a permit that included the prohibition in today's proposed rule, the enforcement discretion and affirmative defense associated with such a permit would be available.

NPDES permits for municipal satellite collection systems that are composed of combined sewers would contain technology-based requirements (best available technology economically achievable (BAT)/best conventional pollutant control technology (BCT)) and any more stringent water quality-based requirements and applicable standard permit

conditions. In other words, such permits would implement the Combined Sewer Overflow Control Policy (April 19, 1994)). Permits for satellite systems that are combined sewer systems would not be required to contain the standard permit conditions for reporting, public notification, and recordkeeping; the CMOM program; and the prohibition on SSO discharges proposed today. As discussed elsewhere, EPA is requesting comment on whether the standard permit condition for reporting, public notification, and recordkeeping should apply to relevant noncompliance events associated with combined sewers. If, based on comment, EPA determines in the final rule to apply this condition to such discharges, the condition would be included in permits for combined sewer systems. Permits for combined sewer systems, however, would be required to contain other applicable existing standard conditions, including non-compliance reporting requirements at 40 CFR 122.41(l)(6) and (7), which require reporting any non-compliance event (e.g., dry weather discharges from permitted CSO outfalls, unauthorized discharges from manholes or other locations not authorized by the permit).